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SEMI-MONTHLY TEMPERATURE AND GEOPOTENTIAL ANOMALY IN THE UPPER 500 METERS ALONG THE OAHU - FARALLON ISLANDS GREAT CIRCLE FROM NOVEMBER 15, 1967 THROUGH DECEMBER 15, 1979

James M. Price and Dailin Wang

May 1989

Prepared for
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under contract
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Abstract

Semi-monthly time series of expendable bathythermograph (XBT) observations, objectively mapped onto the great circle arc from Oahu, Hawaii to the Farallon Islands off San Francisco, California are presented. They reveal the temperature structure in the upper 500 meters from November 15, 1967 through December 15, 1979. In addition, sections of geopotential anomalies relative to 5 MPa (5 mega Pascals) derived from the temperature sections and temperature/salinity (T/S) relations are presented. Averages of temperature and geopotential anomalies over the 12 complete years of data coverage, 1968 - 1979, and over each semi-month (i.e. all January 1 sections, all January 15 sections, all February 1 sections, etc.) during the 12-year period accompany the time series.

A modest bibliography of articles on other observations of the temperature structure and currents in the North Pacific is included, along with a brief discussion of the various topics addressed in the studies referenced.

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Introduction

One of the best data sets available to study the oceanic circulation in the upper 500 meters in the eastern, mid-latitude North Pacific is the expendable bathythermograph (XBT) observations collected by the National Marine Fisheries Service in a ships-of-opportunity program begun in June 1966, using commercial ships traveling between the Hawaiian Islands and North America. Processed data from this program were obtained on two different occasions, separated by about 7 years. On each occasion, the data received had been processed differently by different investigators. The two acquisitions will be referred to as data sets 1 and 2.

Data set 1 was obtained in 1978 from J. F. T. Saur (Scripps Institution of Oceanography) and Clive E. Dorman (San Diego State University). They optimally interpolated the individual XBT observations onto the great circle arc between a point southeast of Oahu (21° 12' N, 157° 42' W) and the Farallon Islands, just off San Francisco, at several depths between the surface and 500 m (Dorman and Saur, 1978, and Saur et al., 1979). The horizontal grid spacing was 92.3 km, yielding 42 equally spaced grid points. The ship transects were performed at roughly 2-week intervals. The optimal interpolation employed a regular 15-day grid spacing over the interval from June 1966 through December 1974. The grid points were the 1st and 15th of each month.

The first year and one-half of observations were made with shallow sounding XBT probes (down to about 300 m). Subsequently, deeper sounding probes (below 500 m) were used. The shallower data did not extend deeply enough for the research problem under investigation at that time and were eliminated from consideration. Consequently, data set 1 begins on November 15, 1967 and ends on December 15, 1974.

A few temperature inversions below 90 meters were found and eliminated by linear interpolation to generate monotonically decreasing temperature with increasing depth. Many temperature inversions were found above 90 m and were not smoothed-out; they are often large compared to instrument error and are probably real.

Data set 2 was obtained in 1985 from Douglas R. McLain (National Marine Fisheries Service) for the purpose of re-examining with longer records some interesting phenomena seen in data set 1. The raw data from each transect after December, 1974 had been mapped onto 39 equally spaced grid points (about 100 km separation) along the same great circle section by the following procedure. An XBT cast within 20 km of a grid point was regarded as being coincident with the grid point. Otherwise, linear interpolation in the horizontal direction was performed to obtain values at the grid points. This was done at 10-meter depth intervals from the surface to 500 m. No mapping was done in time; the raw observations were made at roughly 2-week intervals.

The same problem of temperature inversions encountered in data set 1 was found in data set 2 and was handled the same way.

Data sets 1 and 2 were merged at the University of Hawaii by re-griding data set 2 onto the data set 1 grid with the optimal interpolation component of the Harvard University Ocean Descriptive and Predictive System (ODPS) (Miller et al., 1983). A model covarience C(x,z,t) of the temperature field was assumed. Here, x is the distance along the great circle, z is depth, and t is time. The assumed covarience is

$$C = (1 - r^2)e^{-r^2/2}$$

where

$$r^2 = (\Delta x/600km)^2 + (\Delta z/300m)^2 + (\Delta t/100days)^2.$$

The parameters 600 km, 300 m, and 100 days were chosen from consideration of the dominant length and time scales seen in spectral decompositions of the data. The resultant time series spans a little more than 12 years — from November 15, 1967 through December 15, 1979.

In addition to the temperature time series, geopotential anomalies (i.e. anomalies of dynamic height) were produced by combining the temperatures with temperature/salinity (T/S) relations derived from hydrographic data averaged within 2-degree boxes along the great circle (Fig. 1). Price (1981) analyzed the temporal variation of the surface geostrophic currents derived from data set 1. He identified 4 basic flow regimes defined by recognizable features in the geopotential profiles. These regimes are shown schematically in the insert in Figure 2, along with a typical profile of the geopotential before and after spatial smoothing (solid and open circles respectively). The spatial smoothing was performed with a 3-point running mean average with filter weights of [1/4, 1/2, 1/4].

The 4 flow regimes were identified as follows. Between Oahu (point A in Fig. 2) and the maximum in the geopotential profile (point B) is a northwestward component called V1, which exhibits strong seasonal variation. Sometimes the maximum in the geopotential occurs at Oahu, in which case V1 is zero by definition. Toward the eastern end of the section is a region of steep topography (the region between points C and D). This is the California Current, labeled V3 in the figure. Between V1 and the California Current is a region of weak southeastward flow, labeled V2. Finally, between the minimum in the geopotential (point D) and the Farallon Islands (point E) is the Davidson Current (V4), which also varies seasonally. Sometimes the minimum in the geopotential is coincident with point E, and V4 is zero by definition.

Figure 2 also shows a region immediately to the west of the California Current where there are fairly large oscillations in the geopotential about a larger-scale slope that is roughly horizontal, a kind-of "plateau." This feature frequently, but not always, appeared in the sections. (Only the California Current and the weaker "interior" flow V2 appear in every section.) Also, it is in the geographic neighborhood of the subtropical front and may be coincident with it. (This front is much more conspicuous as a salinity front than a temperature front; the XBT observations alone do not determine its location.) The difficulty in identifying (or arbitrarily imposing) the western edge of this "plateau" discouraged declaring it to be a 5th flow regime, although it persists in the 12-year mean.

Note that V1 has a companion local maximum: a second, neighboring peak in the geopotential profile. This situation was a common occurrence and also has been observed in a few hydrographic/CTD sections running roughly perpendicular to the Hawaiian ridge (Roden, 1977 and 1980, and Talley and deSzoeke, 1986). On a few occasions, 3 prominent peaks were seen. These peaks could be cuts through eddies or part of a complex current system along the northeastern flank of the Hawaiian Islands.

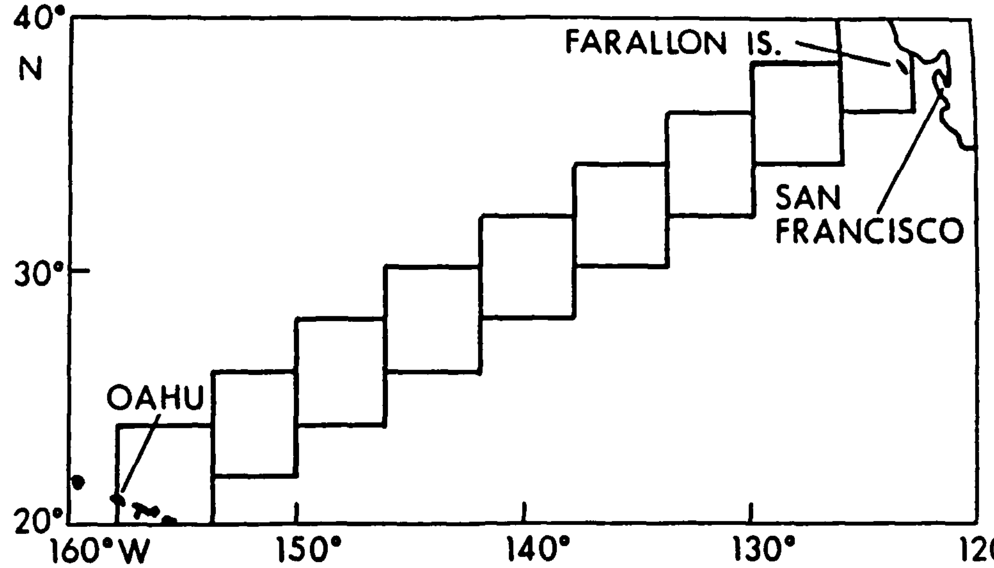

Figure 1. Two-degree boxes along the great circle section between Oahu and the Farallon Islands in which historic hydrographic observations were averaged to produce temperature/salinity (T/S) relations.

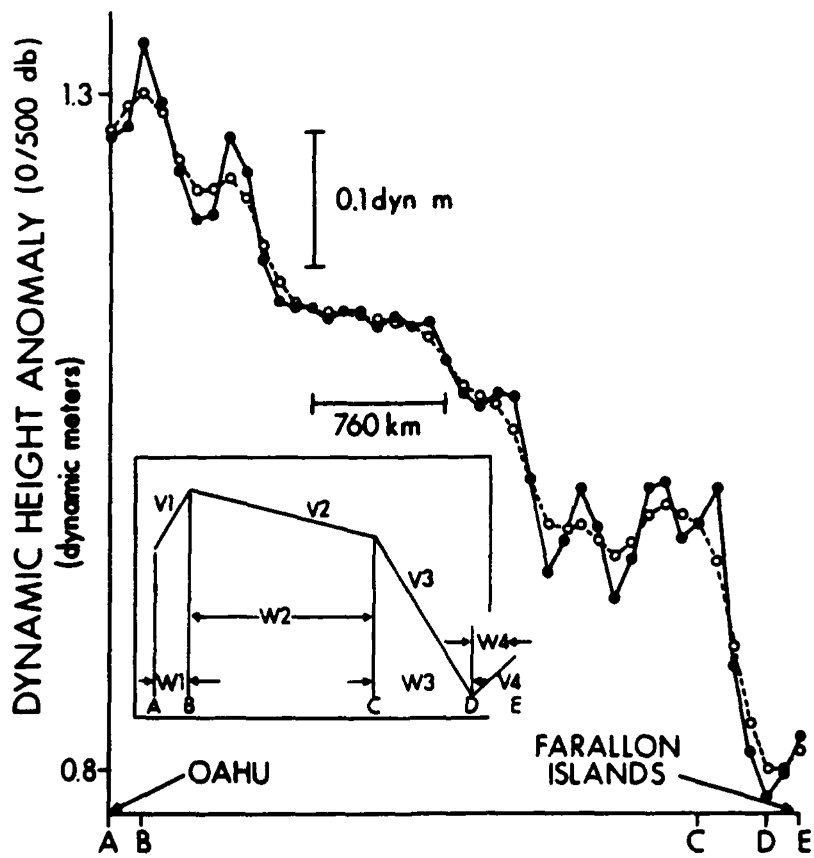

Figure 2. A representative profile of geopotential anomaly before and after spatial smoothing (solid and open circles respectively). The insert contains a schematic of the 4 flow regimes identified. V1, V2, V3, and V4 are the surface transports; W1, W2, W3, and W4 are the time-varying widths of the currents.

The variation in the widths of the 4 components (W1, W2, etc.) (Fig. 2 *insert*) was also examined. W1 and W4 strongly correlated with the V1 and V4 geostrophic transports primarily because of the definitions of the currents. The width of the California Current, W3, tended to increase with an increase in its transport, V3. The maximum in the width of the California Current tended to preceed the maximum in its strength by 1 to 3 months. This is not an artifact of the definition of the current. The width of the interior flow, W2, however, did not correlate with fluctuations in V2.

Data Presented

Three kinds of presentations are made in this report. The first is the temperature at selected depths, followed by the geopotential anomalies relative to (about) 5 MPa (i.e. 5 mega-Pascals, which equals 500 decibars) derived from the temperature and T/S relations. Thirdly, the geopotential anomalies at 0/5 MPa, 1.5/5 MPa, and 0/1.5 MPa are shown together for comparison. No spatial smoothing was performed on any of these sections.

Each presentation consists of the great circle sections in time-series fashion from November 15, 1967 through December 15, 1979, followed by the average over the entire 12 complete years 1968 through 1979, which, in turn, is followed by the averages over all January 1 sections, all January 15 sections, all February 1 sections, ..., all December 15 sections. To avoid temporal bias, the first 3 sections were not used in the averages. These were the sections from the end of 1967. Instead, the averaging was done over the 12 complete years 1968 through 1979.

Other Observations

The data set presented in this report is somewhat unique because of the excellent temporal coverage. Other valuable observations of temperature and currents in the mid-latitude North Pacific have been made over the years and may also be of interest to the reader. The bibliography contains references to descriptions and analyses of some of these data sets; it is in no way exhaustive. However, many excellent studies are listed, and an investigator just beginning to learn about temperature and current observations in the North Pacific can make a good start with them.

The earliest systematic investigation of the waters around the Hawaiian Islands known to the authors was conducted by the Fish and Wildlife Service of the U. S. Department of the Interior in the late 1940's and early 1950's . The investigation was part of a larger program called the Pacific Oceanic Fishery Investigation (POFI), which surveyed a large portion of the central Pacific. Six cruises were dedicated to the Hawaiian Islands area. McGary (1955) reports on the first three, and Seckel (1955) describes the observations from the last three. Temperature, salinity, dissolved oxygen, and inorganic phosphate concentration were observed along with the prevailing meteorological conditions and geomagnetic electrokinetograph (GEK) measurements of the currents. The other publications by Seckel document further analyses of the data from the POFI cruises and results from subsequent studies including a repeated hydrographic grid around the larger (inhabited) Hawaiian Islands, surveyed monthly for one and one-half years Seckel (1968).

In the mid-1960's, additional comprehensive hydrographic cruises in the Hawaiian waters

were made by Wyrtki et al. (1967), along with measurements from moored current meters (Wyrtki et al., 1969). The most conspicuous features found were strong cyclonic and anti-cyclonic eddies in the lee of the islands (Patzert, 1969).

More recently, there have been a couple of hydrographic sections (Roden, 1977 and 1980) and one CTD section (Talley and deSzoeke, 1986) made (roughly) orthogonal to the Hawaiian ridge. These sections show some of the same features seen in the XBT data and demonstrate that most of the baroclinic structure within 1000 km of the islands exists in the upper 500 m. The numerous other citations of Roden's work refer to excellent investigations of the North Pacific Drift, the subarctic and subtropical fronts, and the smaller (uninhabited) Hawaiian Islands and seamounts in the Kuroshio Extension region. Also, Van Woert (1982) uses satellite observations to study the subtropical front north of the Hawaiian Islands.

The original motivation for collecting the data was to study possible fields of baroclinic Rossby waves. References under the names of Cummins, Emery, Kang, Magaard, Mysak, Oh, Price, Sun, and White refer to theoretical and observational studies of baroclinic Rossby waves in the North Pacific. In addition, comparisons of sea level fluctuations and geostrophic currents have been made by Price (1981) and Saur (1972). Descriptions of the circulation of the whole-subtropical gyre can be found in Wyrtki (1974) and in McNalley et al. (1983). Finally, many other important studies of the Hawaiian Islands area can be found in the bibliography compiled by Gaynor and Magaard (1985), an invaluable source for those interested in the marine biology and geochemistry of the Hawaiian Islands area as well as its physical oceanographic features.

Acknowledgments

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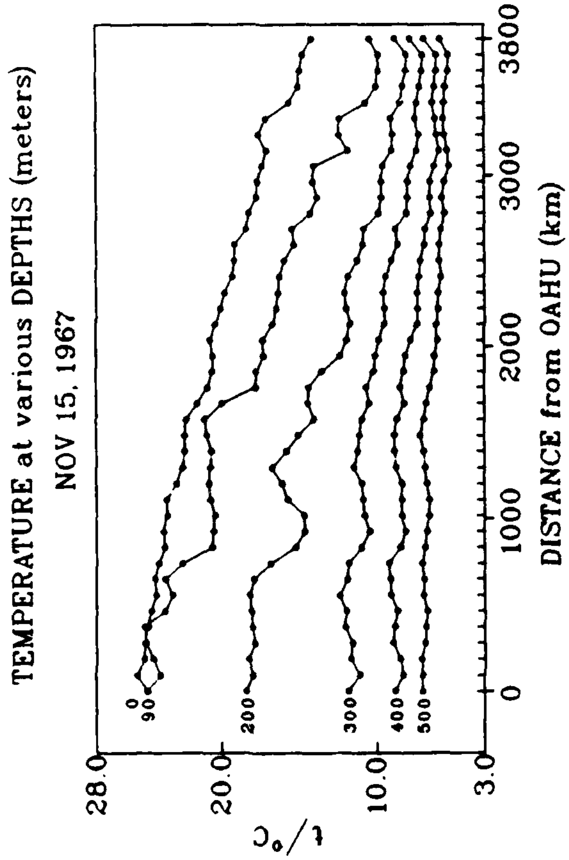
Temperature at Selected Depths,
The 12-Year Average over 1968 through 1979,
Averages over each Semi-month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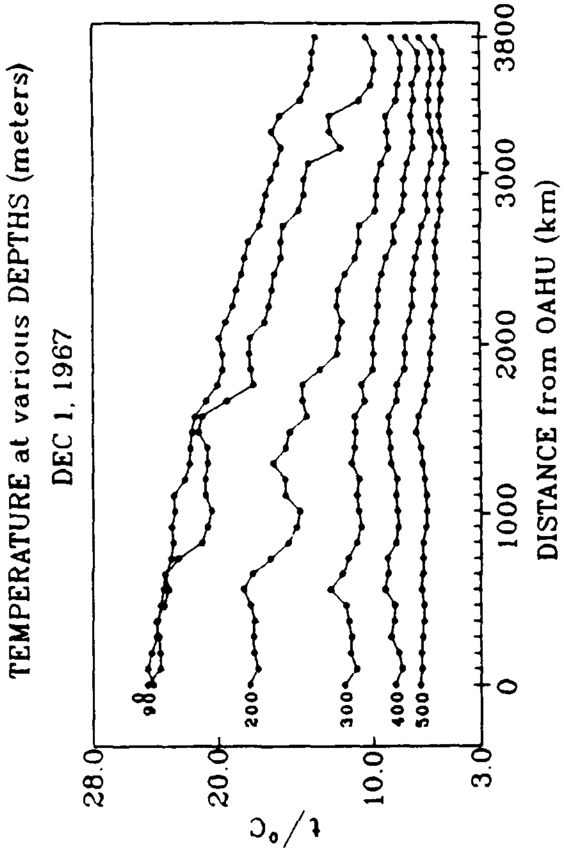
DISTANCE from OAHU (km)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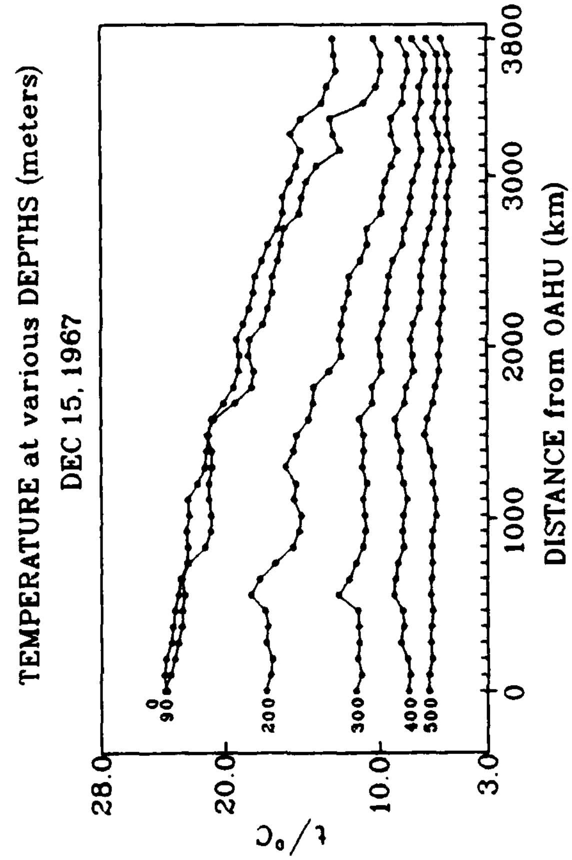
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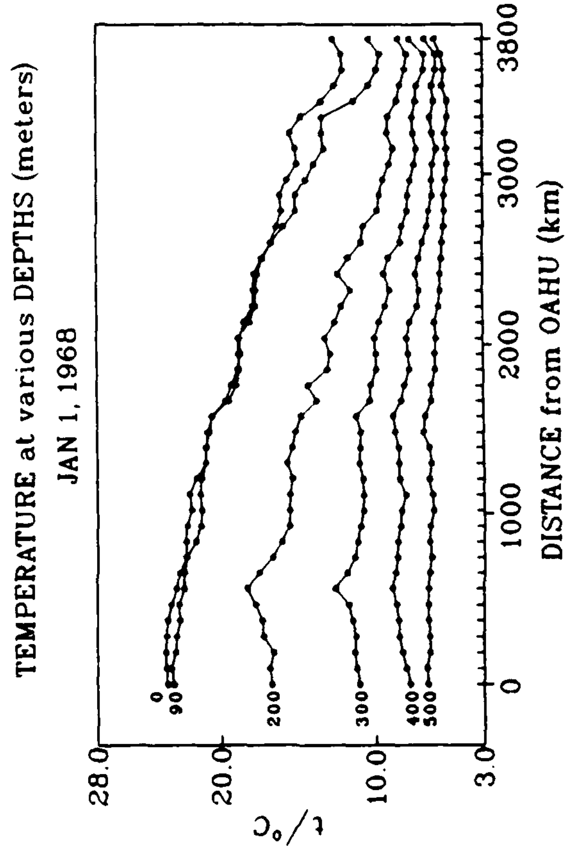
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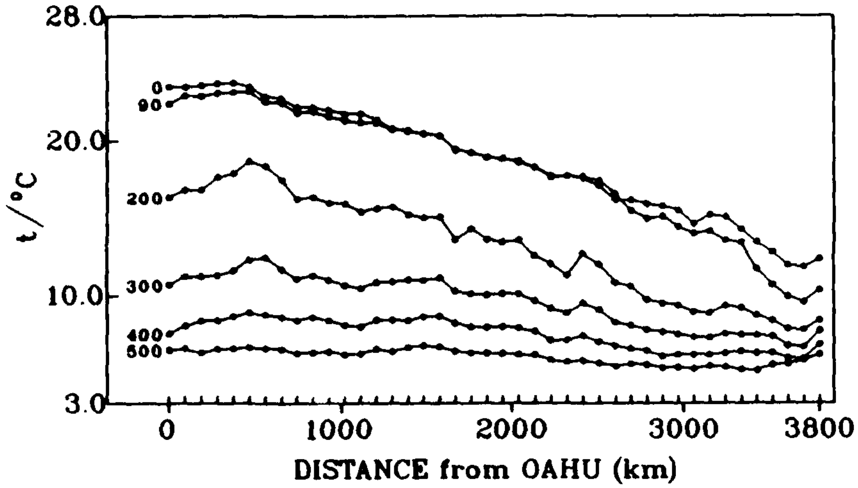

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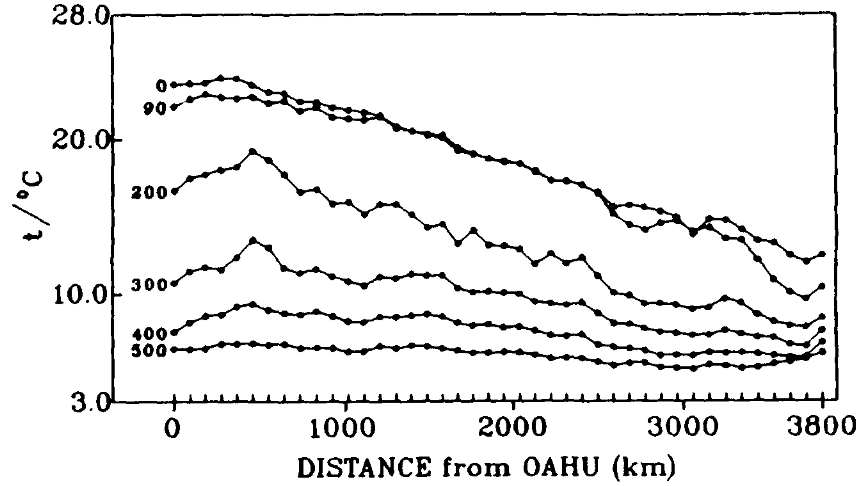

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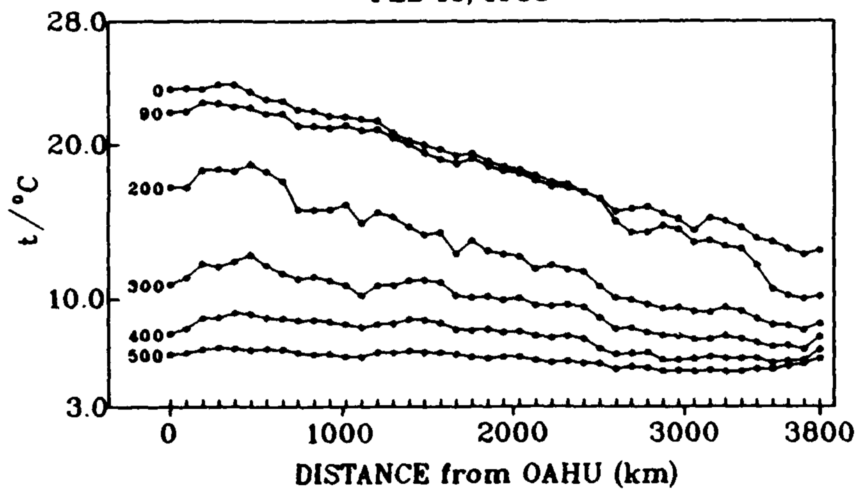

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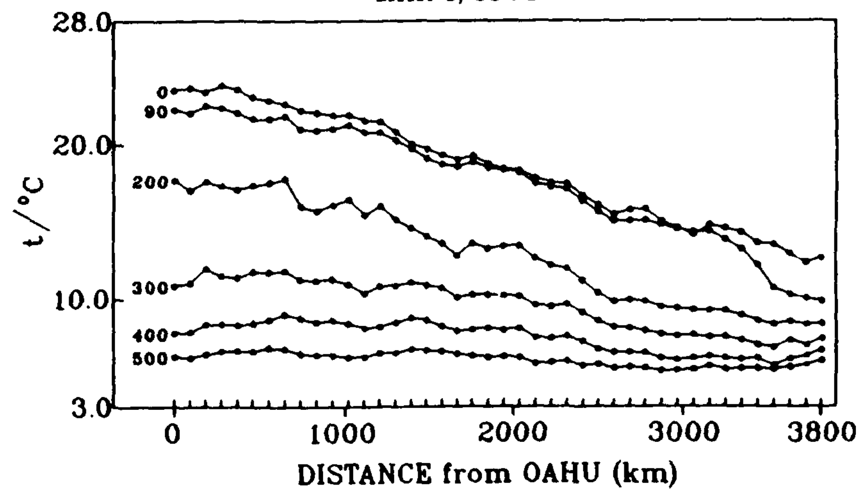

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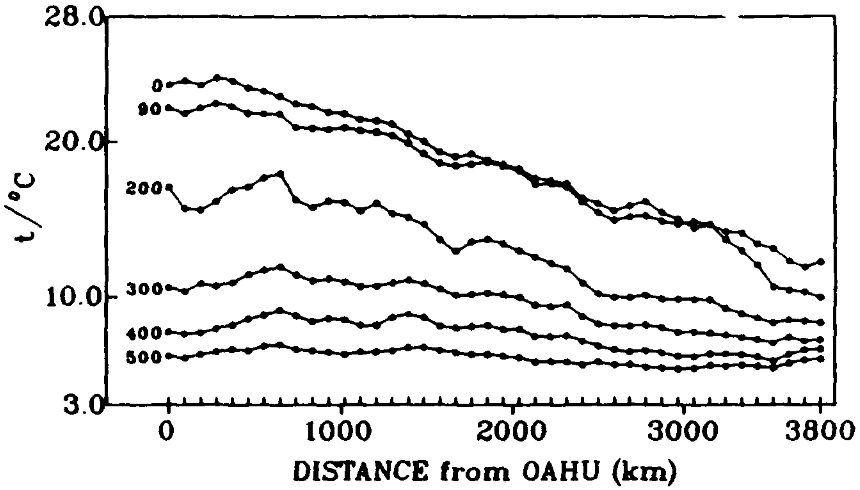

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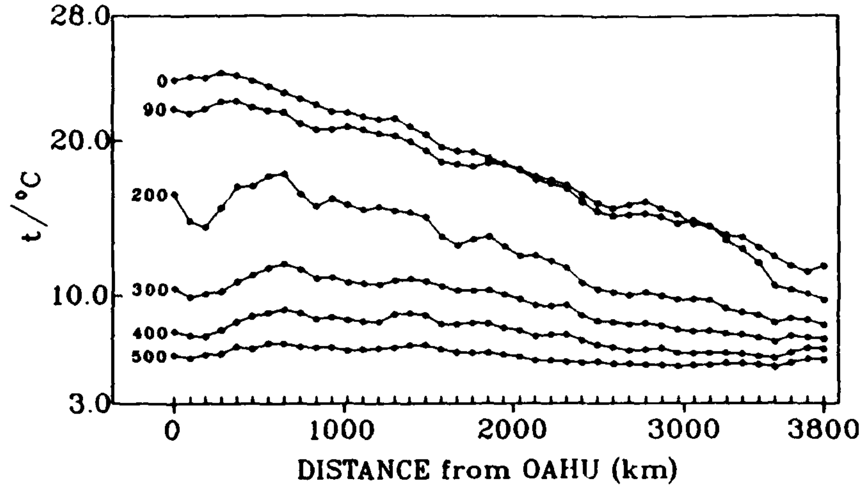

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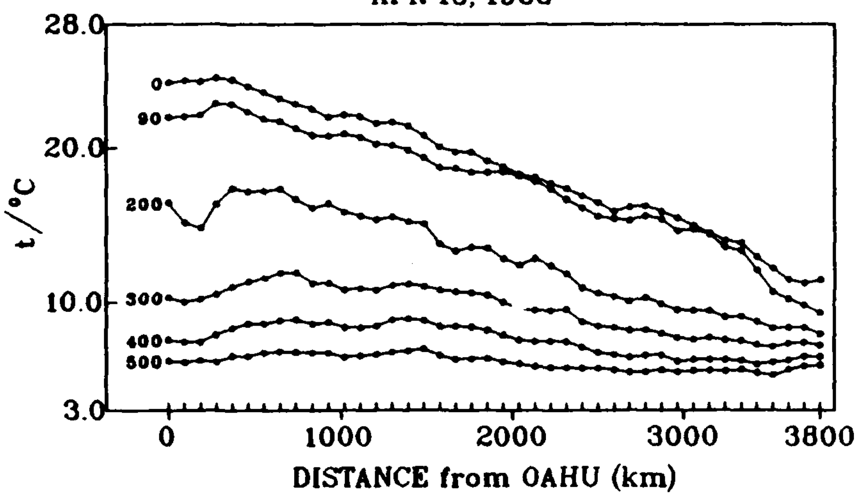

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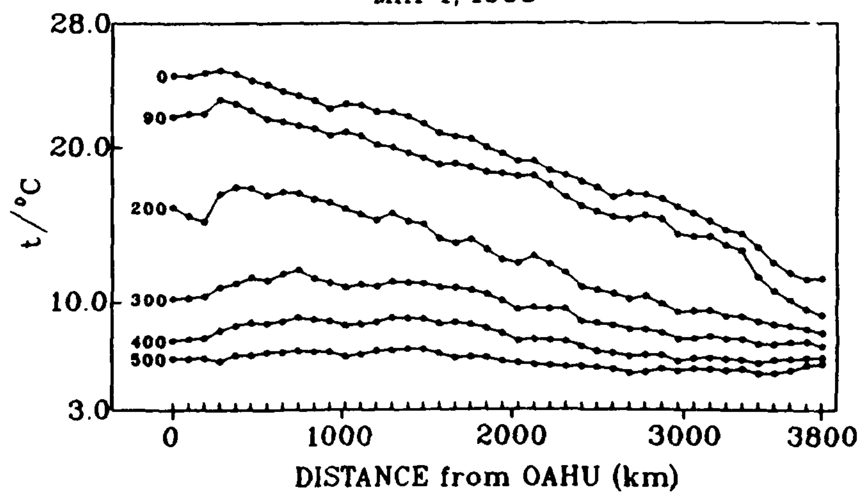

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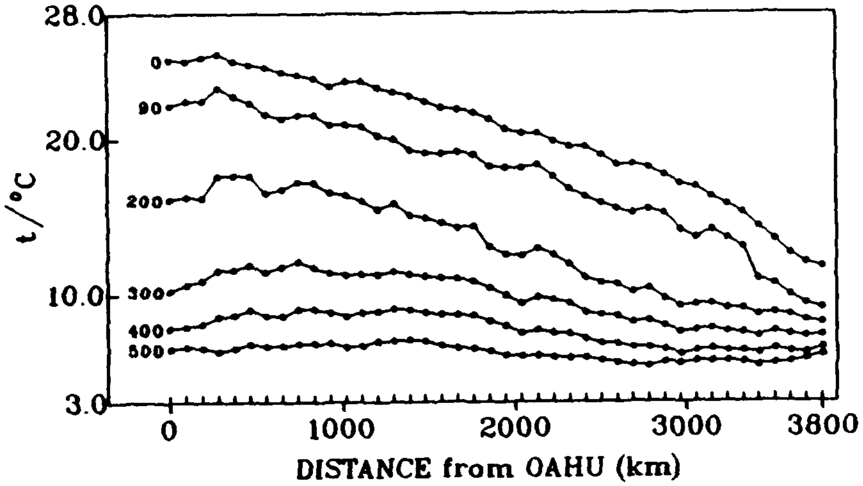

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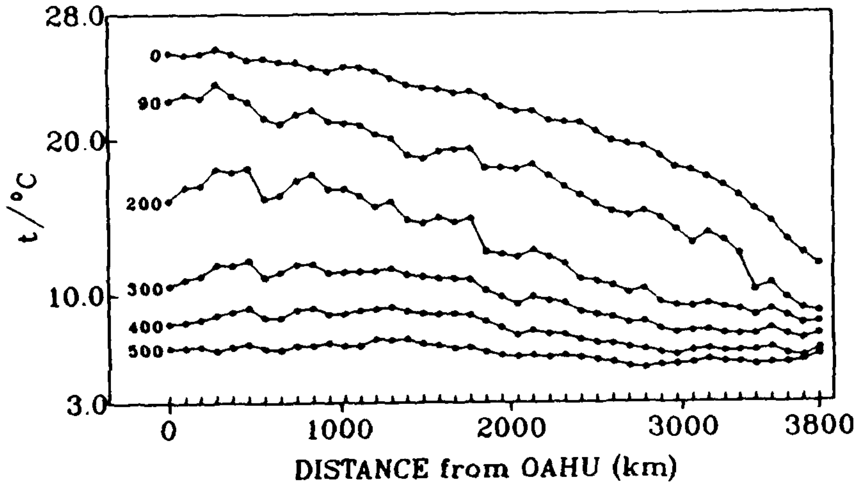
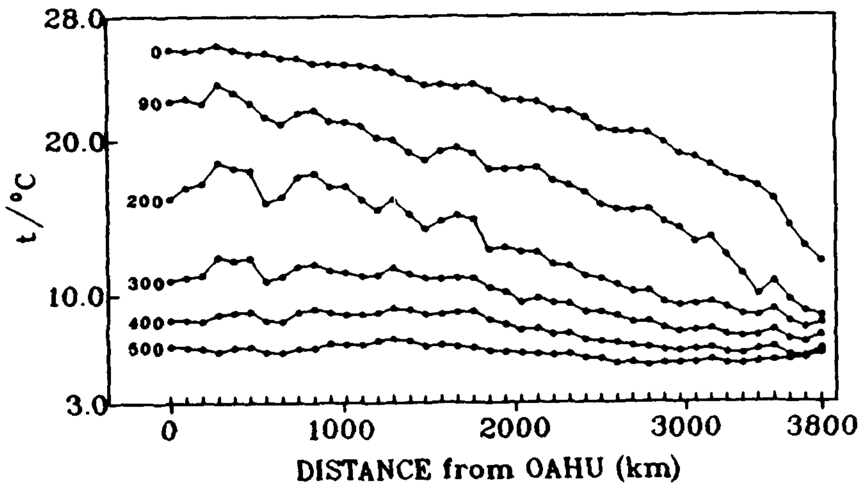
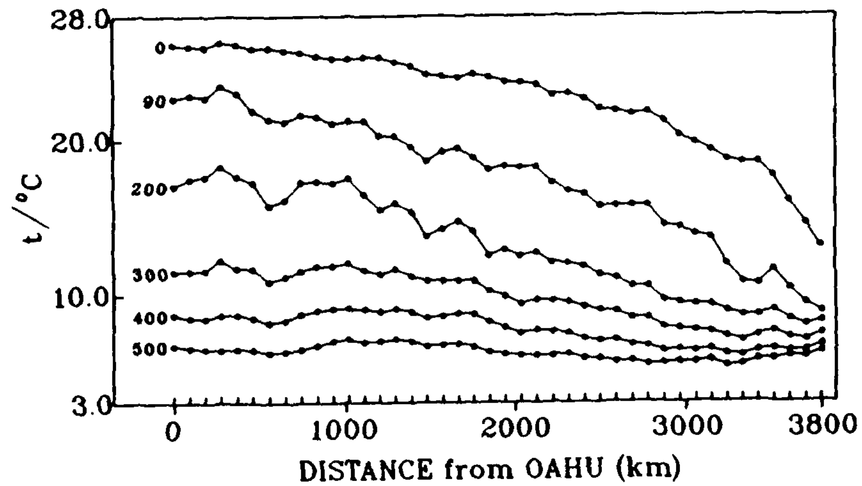


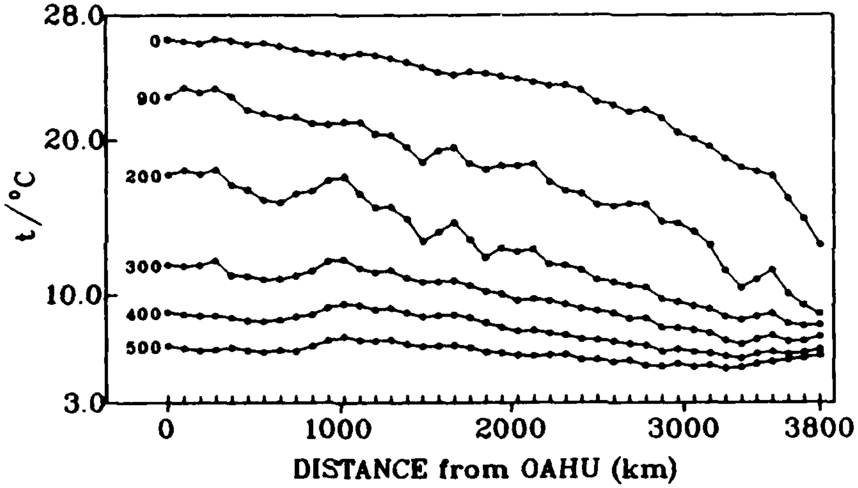
TEMPERATURE at various DEPTHS (meters)
JUN 15, 1968



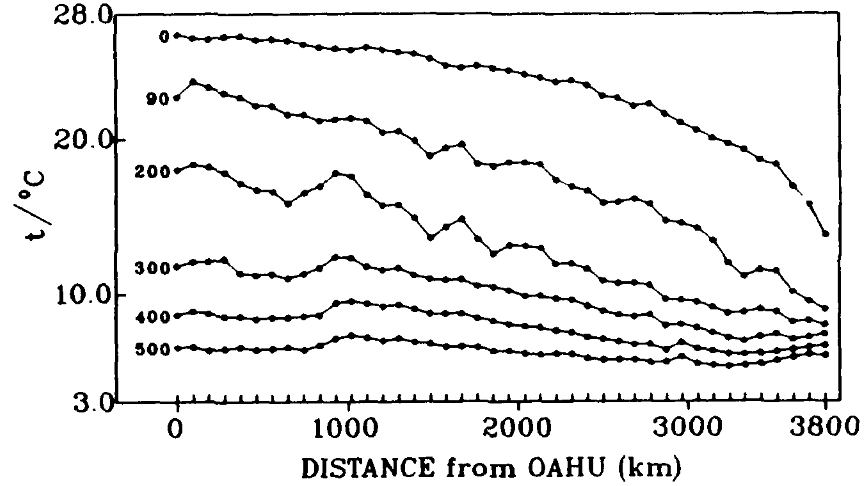
TEMPERATURE at various DEPTHS (meters)
JUL 1, 1968



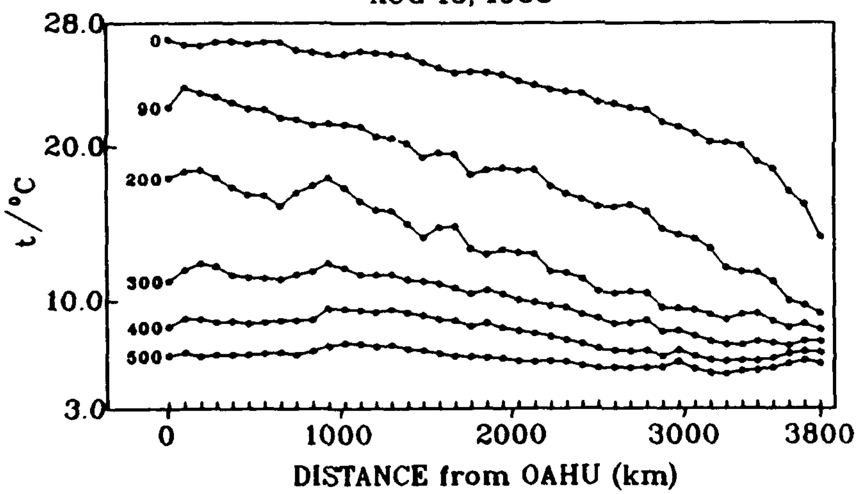
TEMPERATURE at various DEPTHS (meters)
JUL 15, 1968



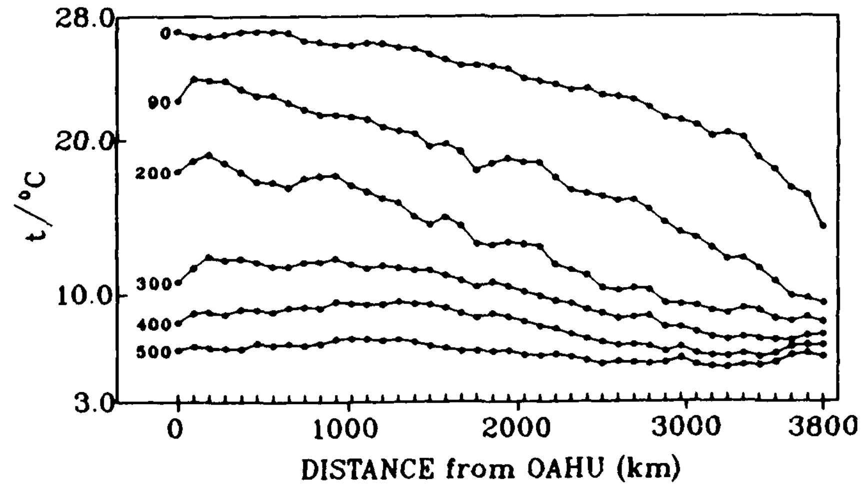
TEMPERATURE at various DEPTHS (meters)
AUG 1, 1968



TEMPERATURE at various DEPTHS (meters)
AUG 15, 1968



TEMPERATURE at various DEPTHS (meters)
SEP 1, 1968



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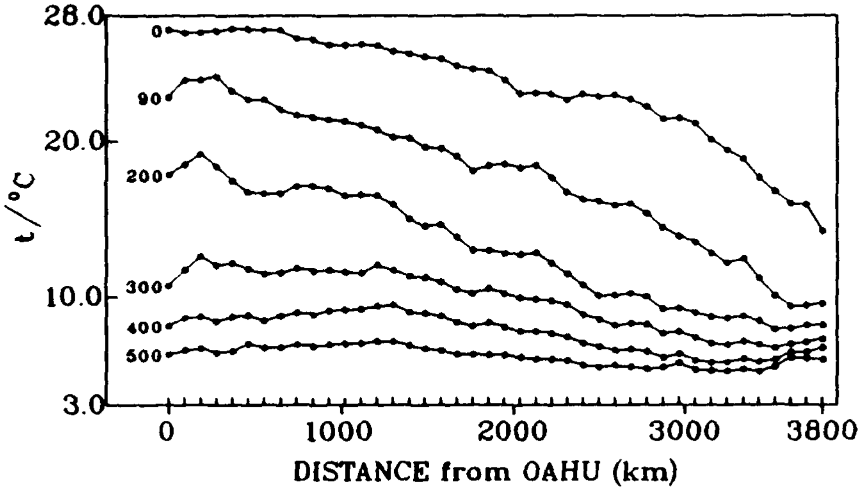
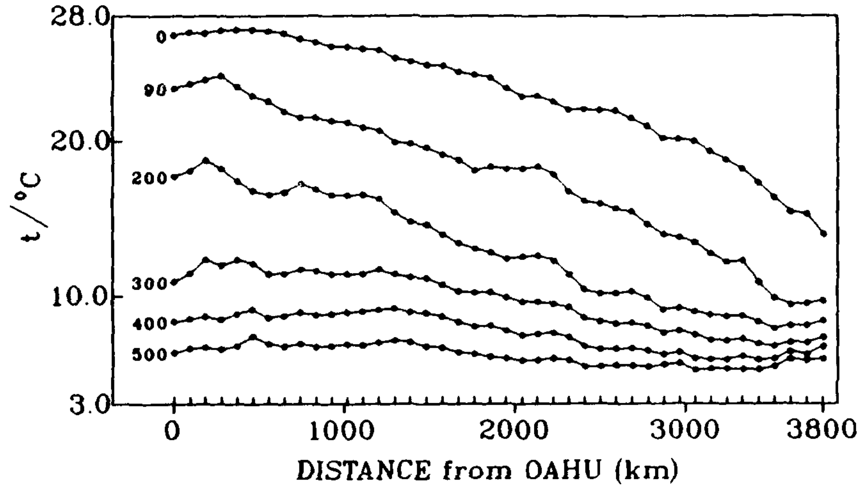
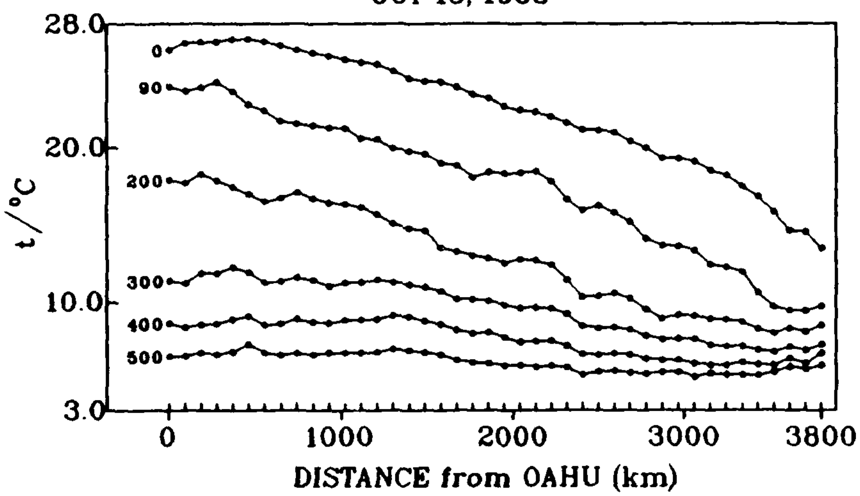
SEP 15, 1968



TEMPERATURE at various DEPTHS (meters)
OCT 1, 1968



TEMPERATURE at various DEPTHS (meters)
OCT 15, 1968



TEMPERATURE at various DEPTHS (meters)
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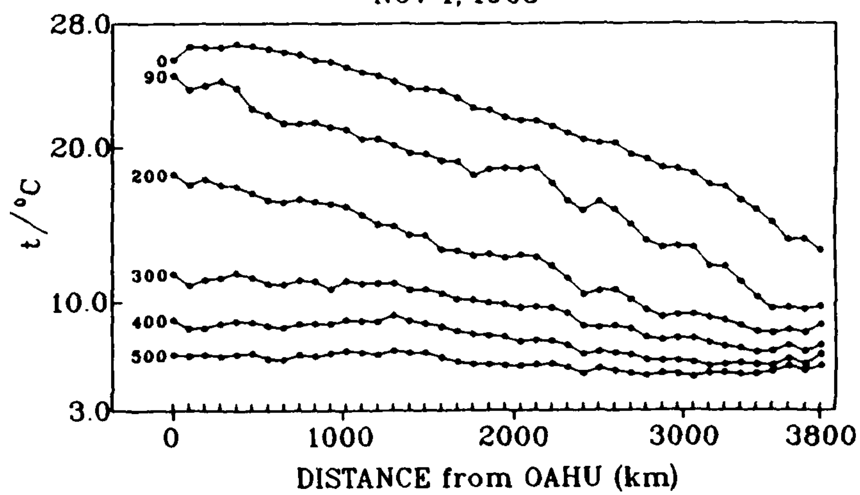

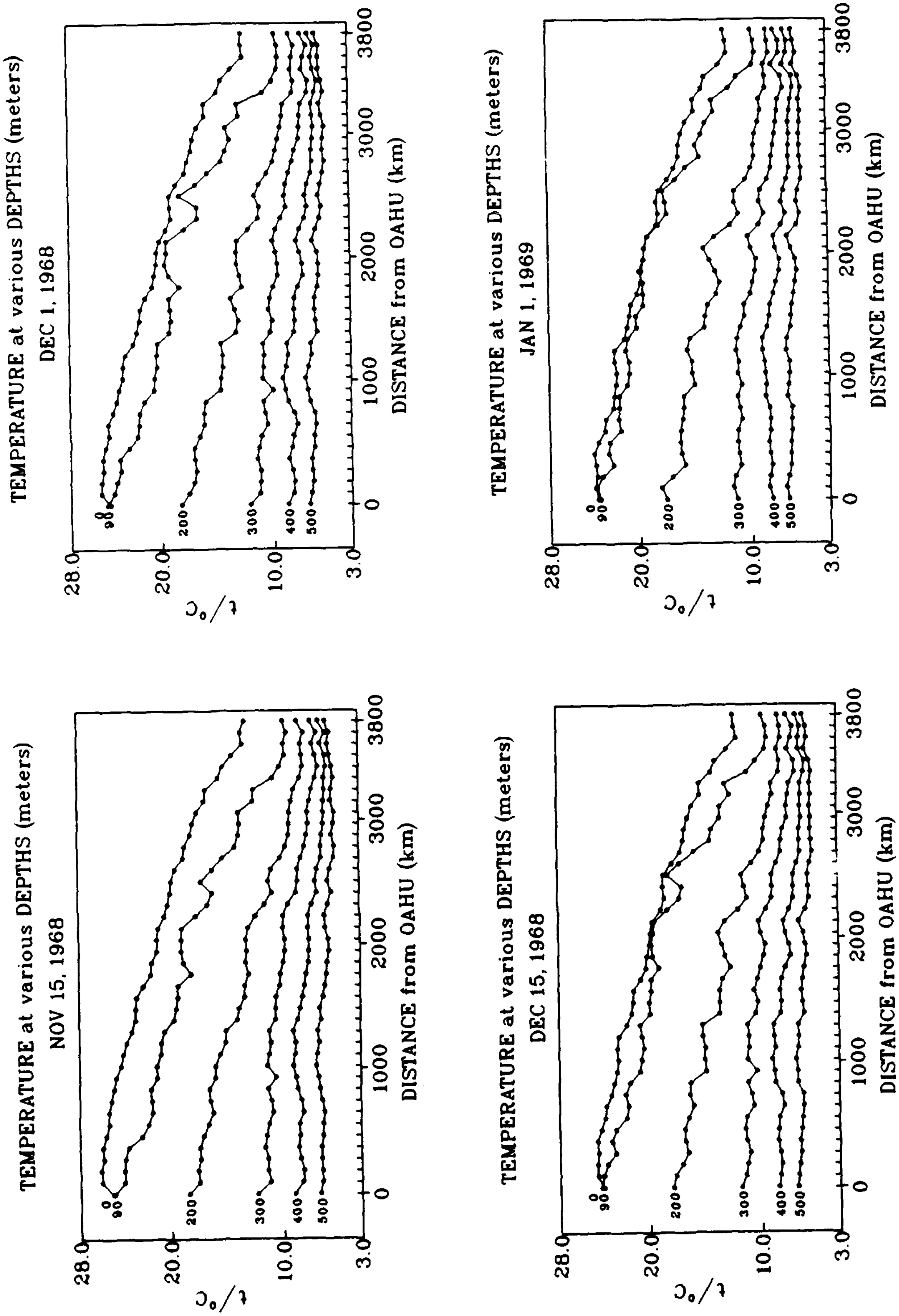
TEMPERATURE at various DEPTHS (meters)
NOV 15, 1968
TEMPERATURE at various DEPTHS (meters)
DEC 1, 1968
TEMPERATURE at various DEPTHS (meters)
DEC 15, 1968
TEMPERATURE at various DEPTHS (meters)
JAN 1, 1969
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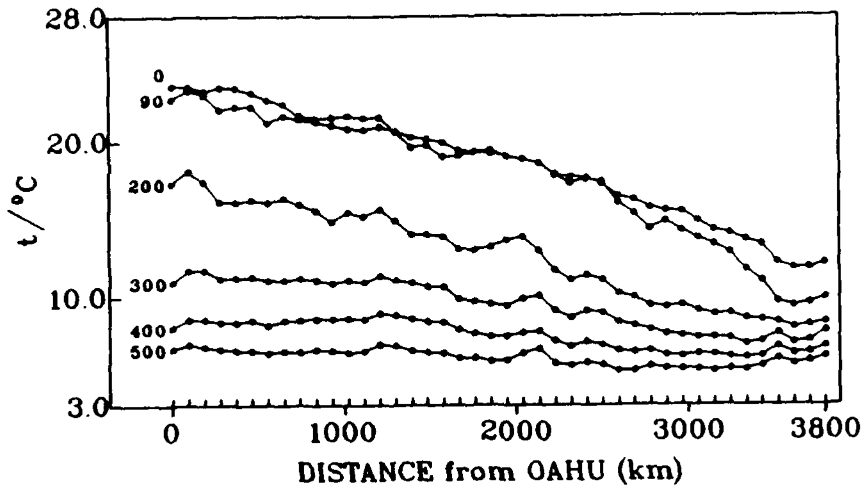
DISTANCE from OAHU (km)

TEMPERATURE at various DEPTHS (meters)
JAN 15, 1969



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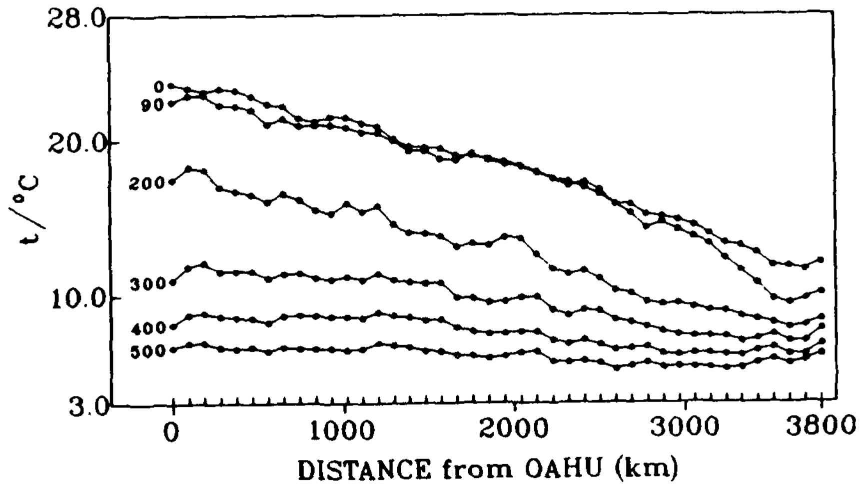
FEB 1, 1969



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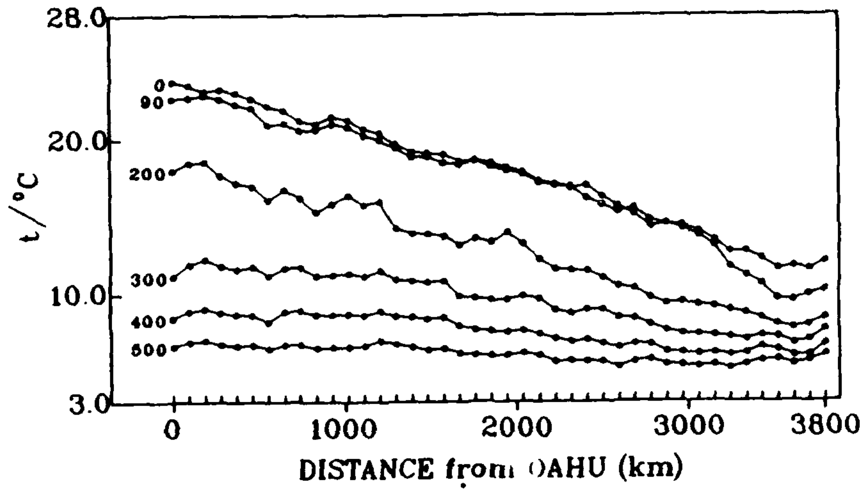

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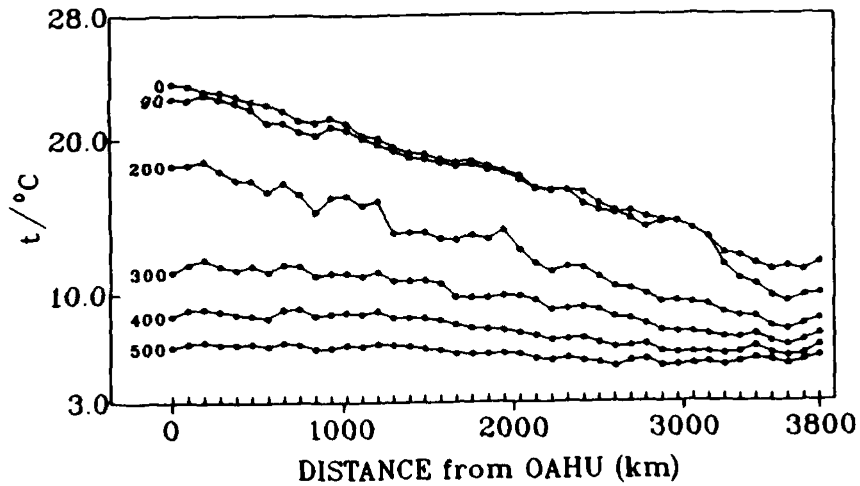
MAR 1, 1969



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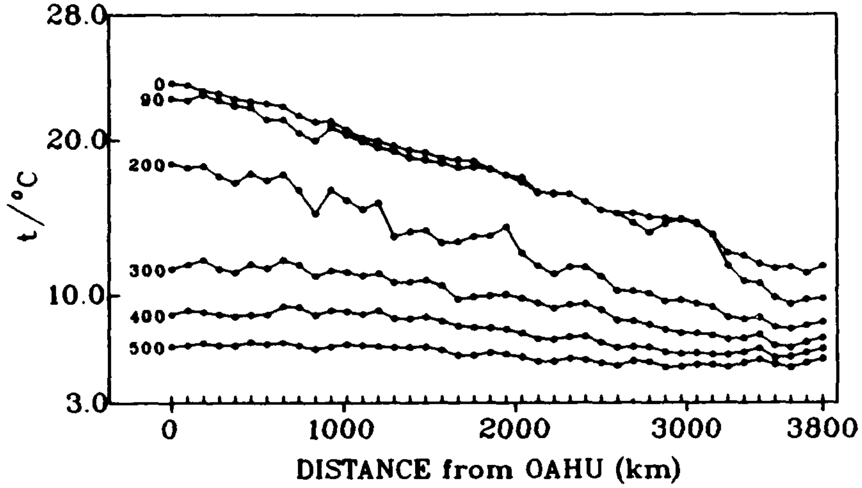
MAR 15, 1969



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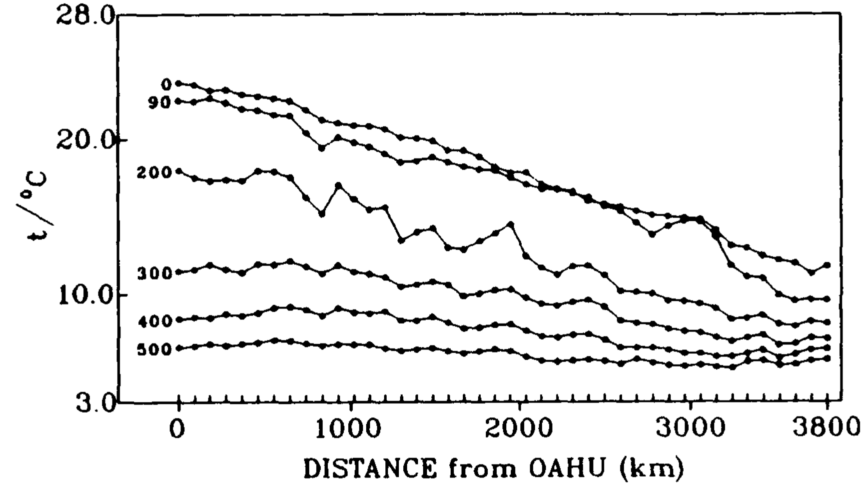
APR 1, 1969



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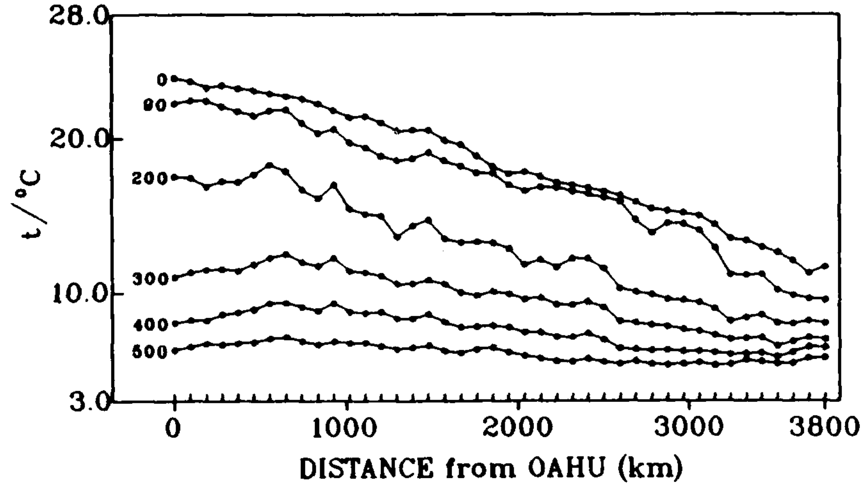
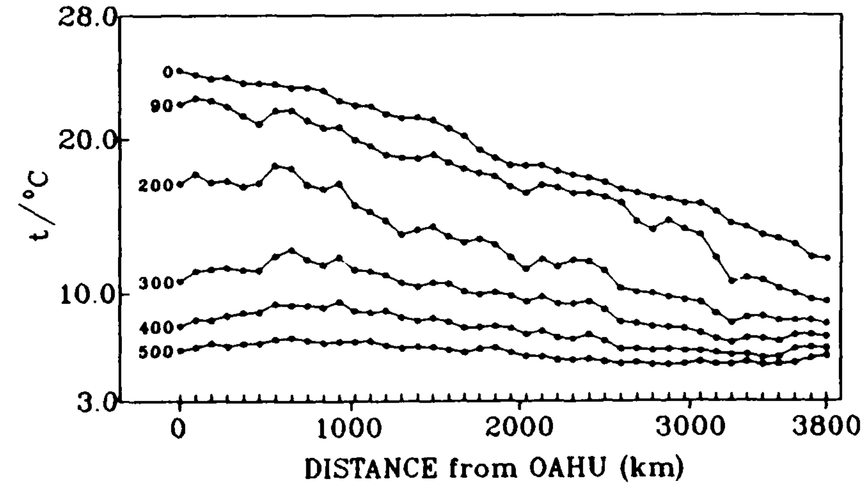


TEMPERATURE at various DEPTHS (meters)
MAY 1, 1969



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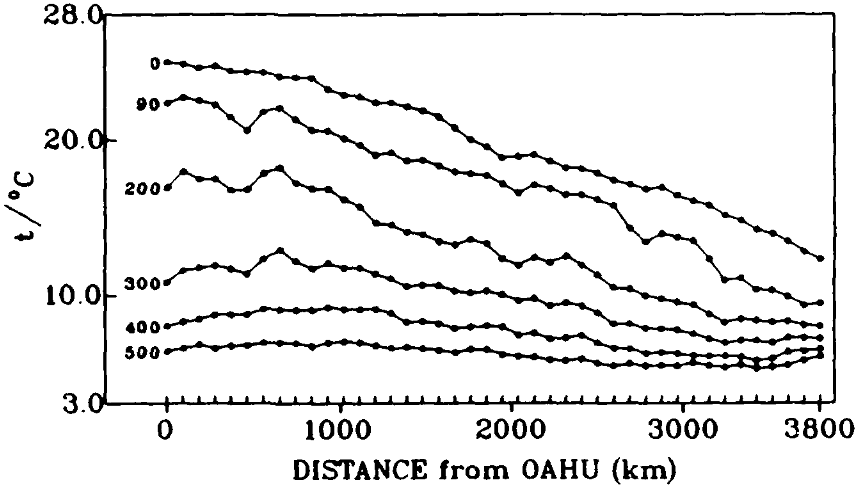

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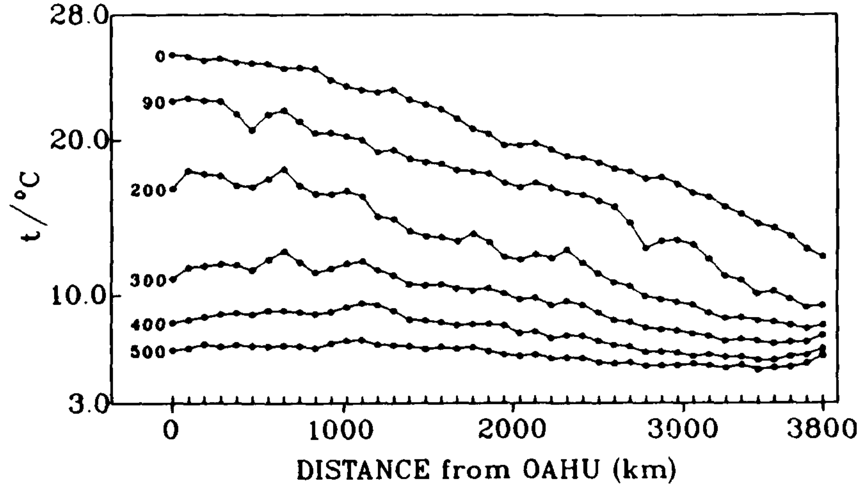

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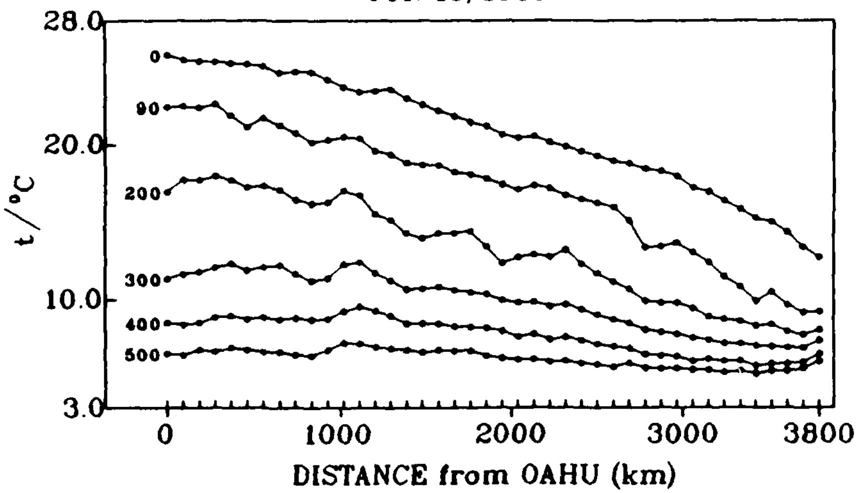

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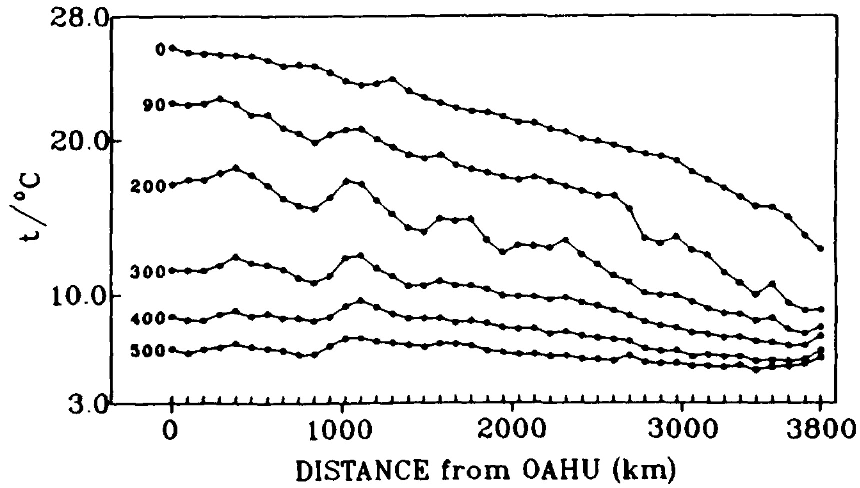

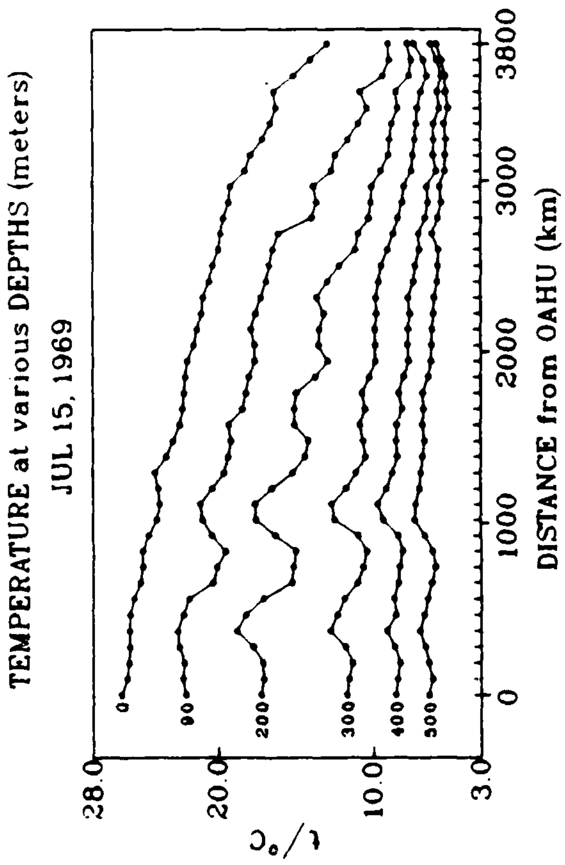
TEMPERATURE at various DEPTHS (meters)
JUL 15, 1969
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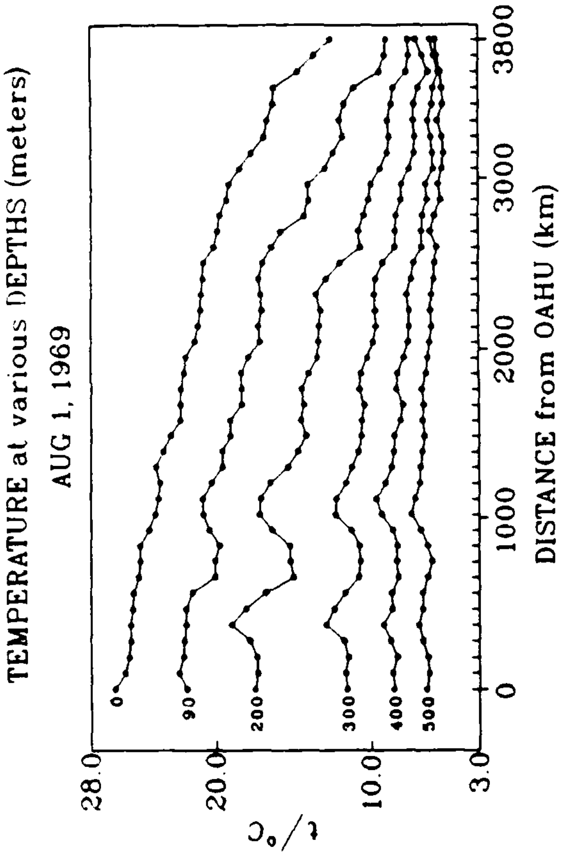
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
AUG 1, 1969
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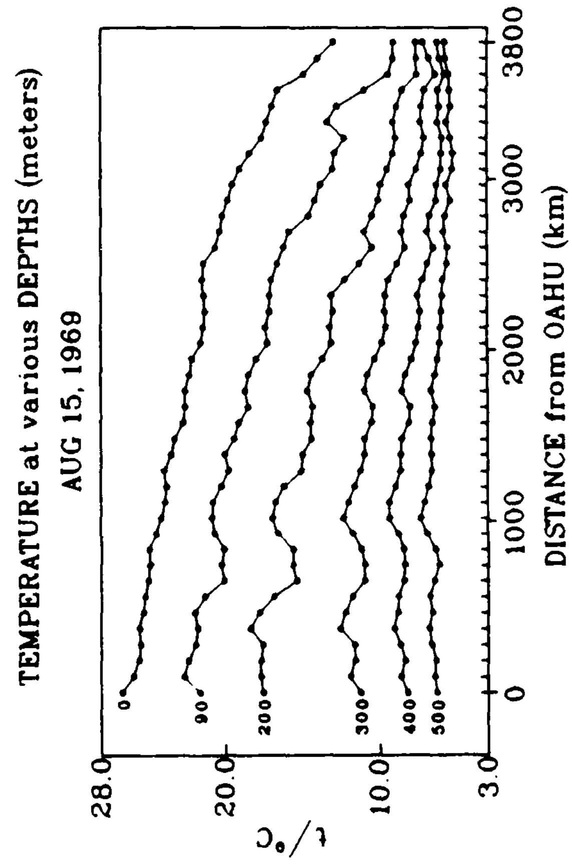
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
AUG 15, 1969
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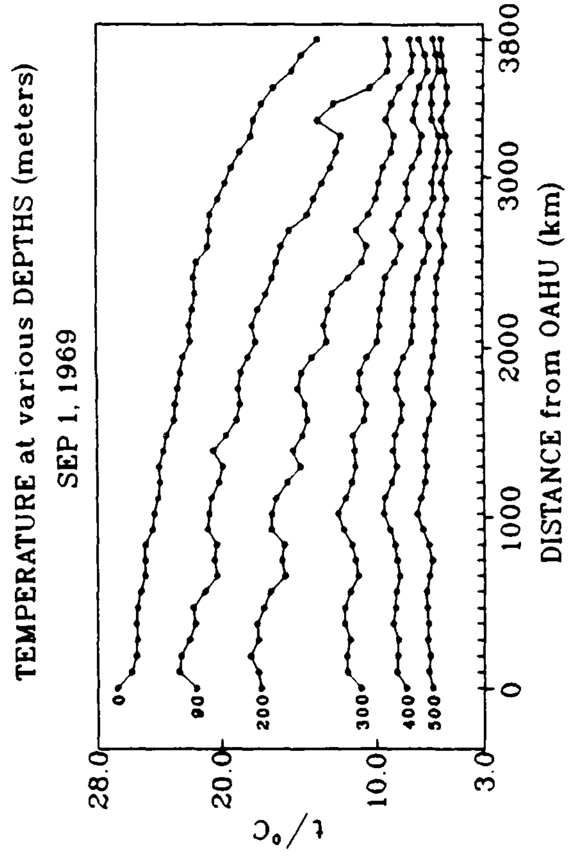
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
SEP 1, 1969
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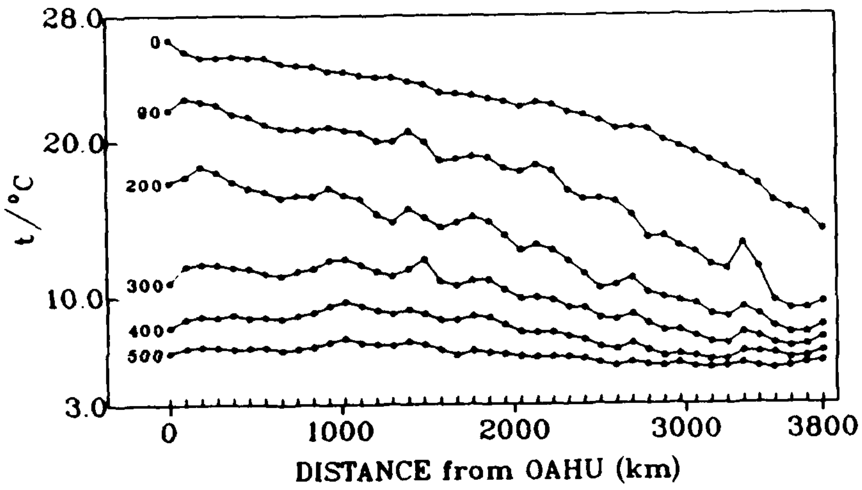
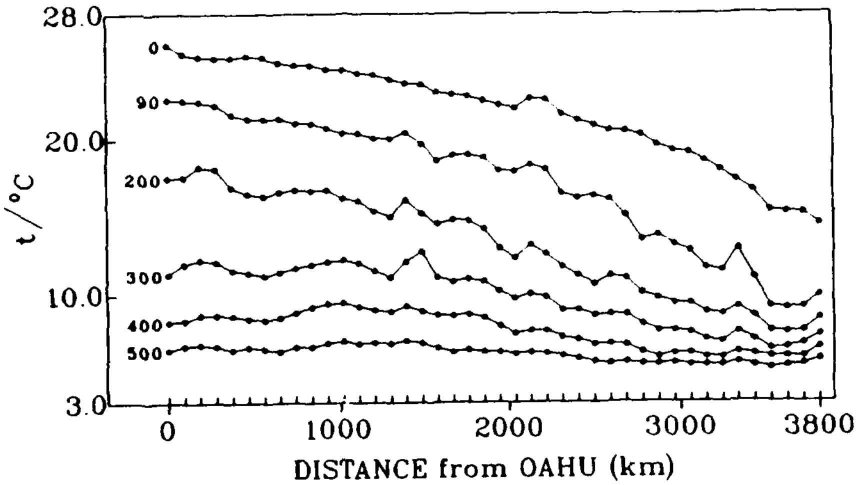
DISTANCE from OAHU (km)

TEMPERATURE at various DEPTHS (meters)
SEP 15, 1969



TEMPERATURE at various DEPTHS (meters)
OCT 1, 1969



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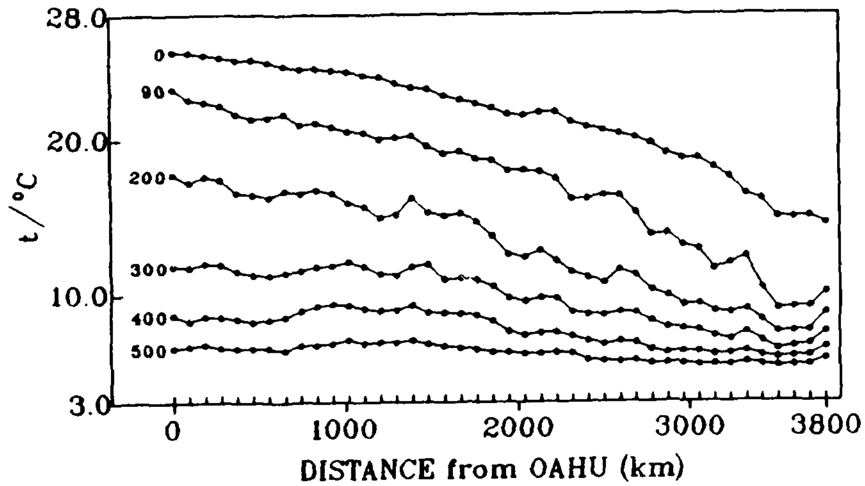

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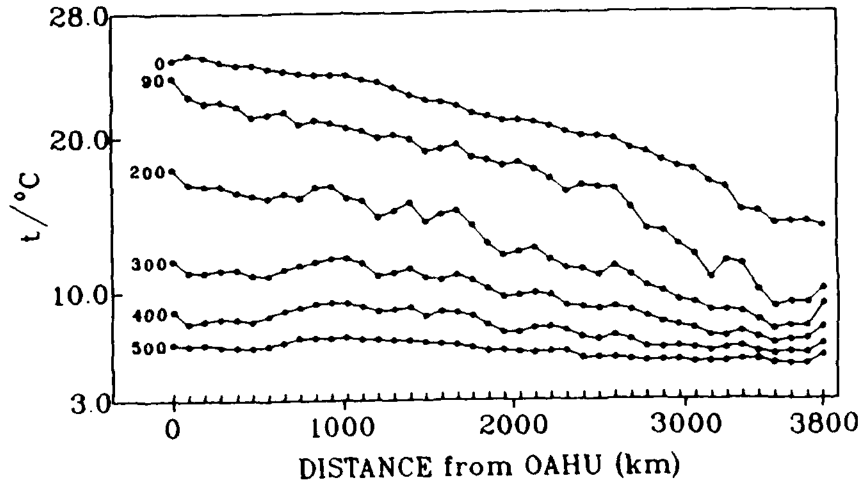

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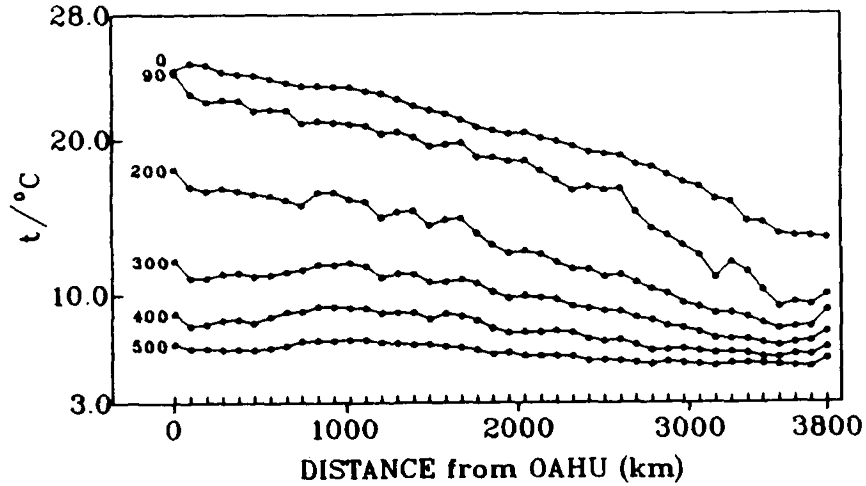

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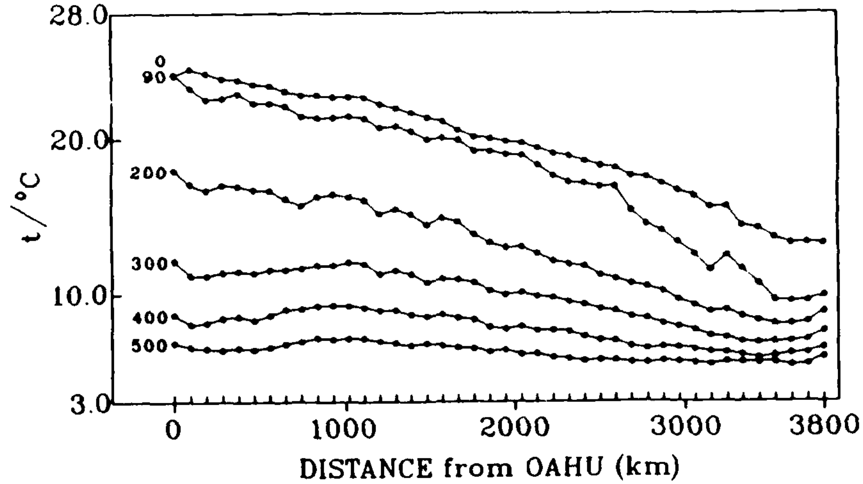

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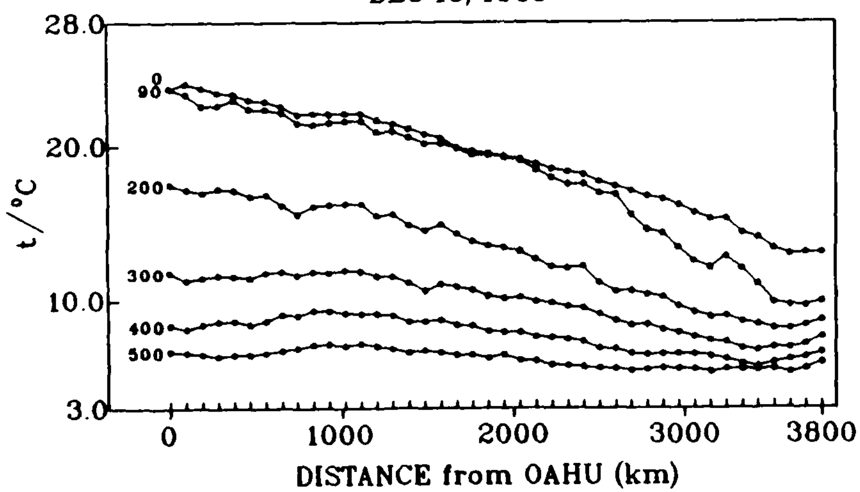

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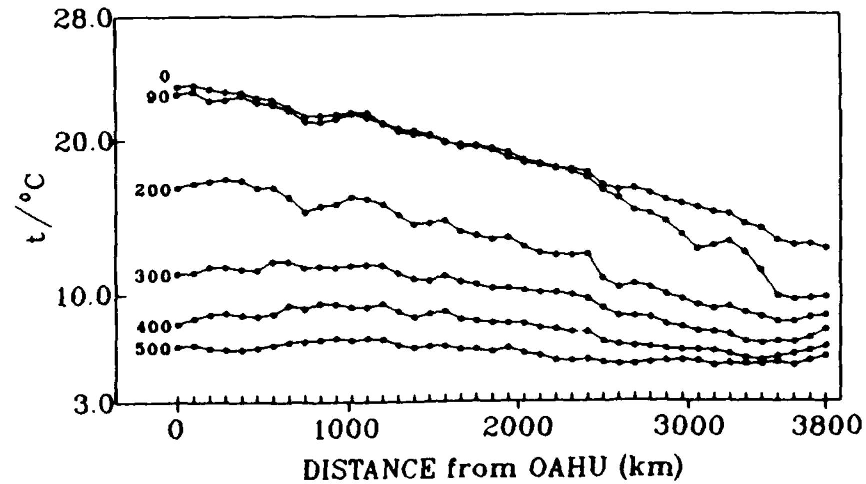

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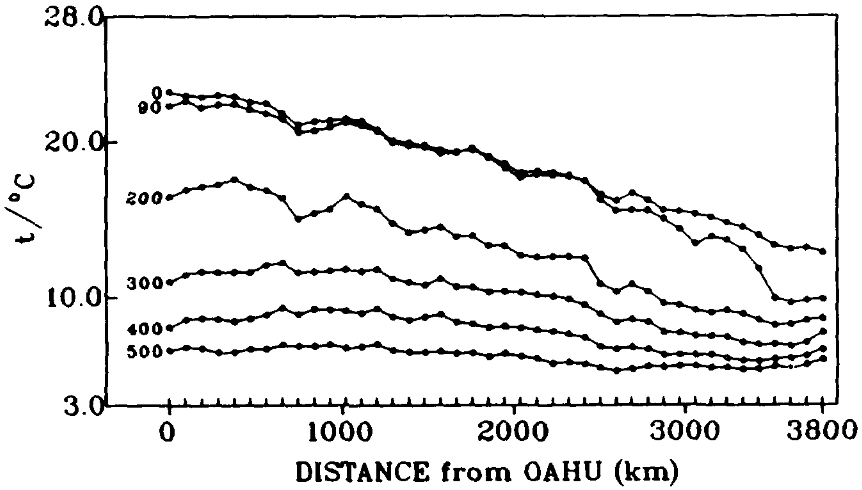

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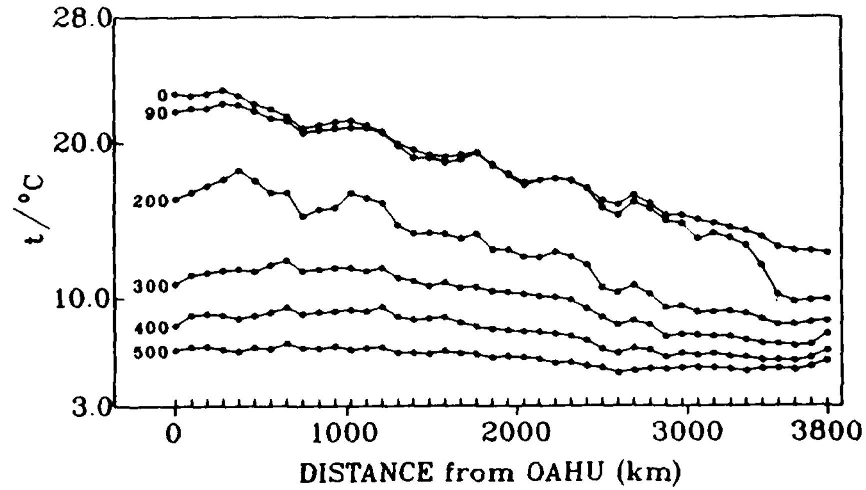

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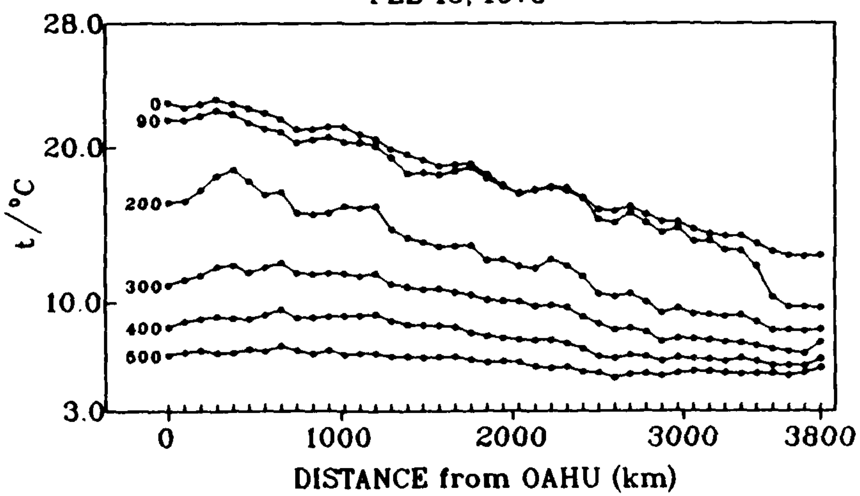

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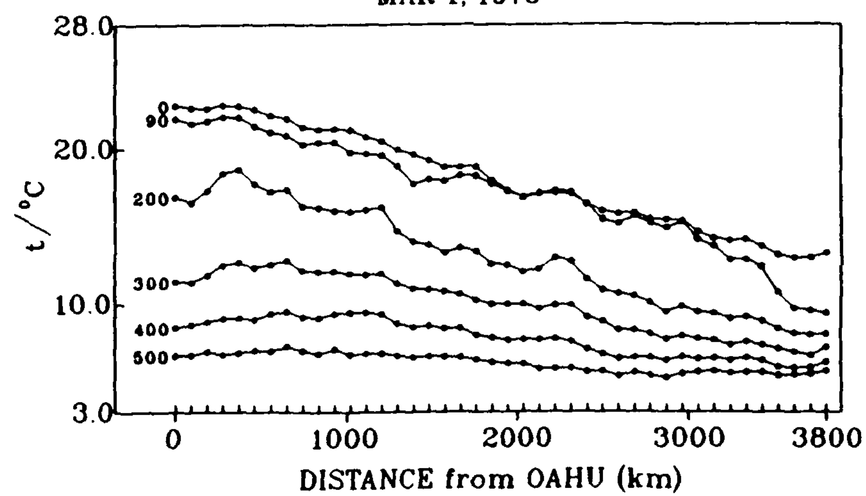
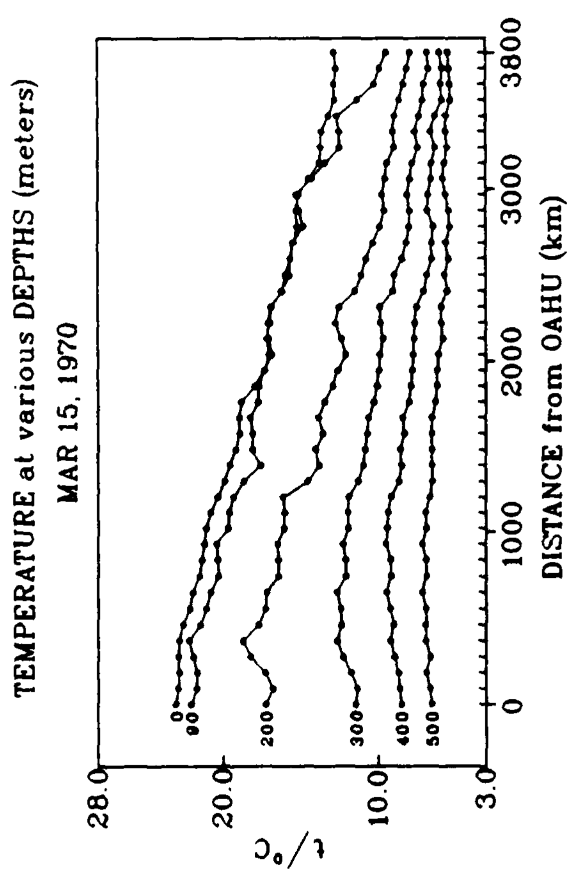
MAR 1, 1970




TEMPERATURE at various DEPTHS (meters)
MAR 15, 1970
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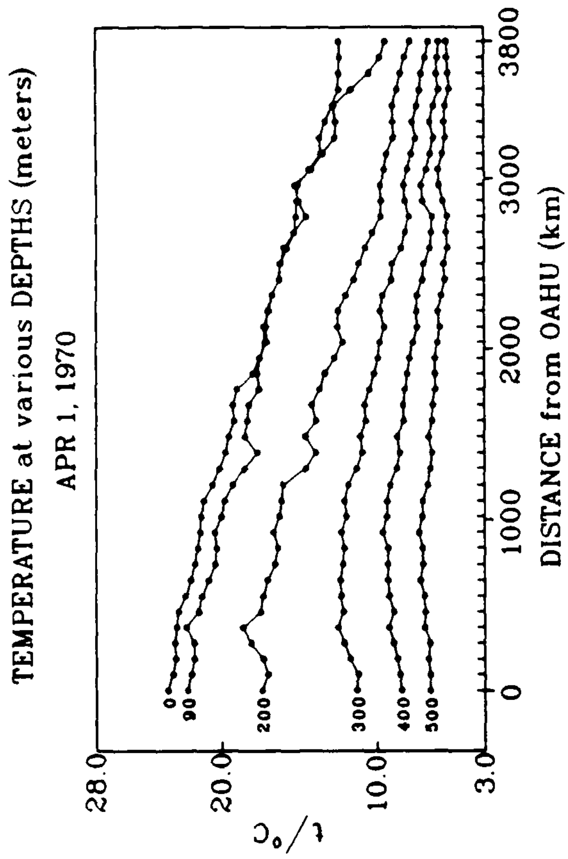
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
APR 1, 1970
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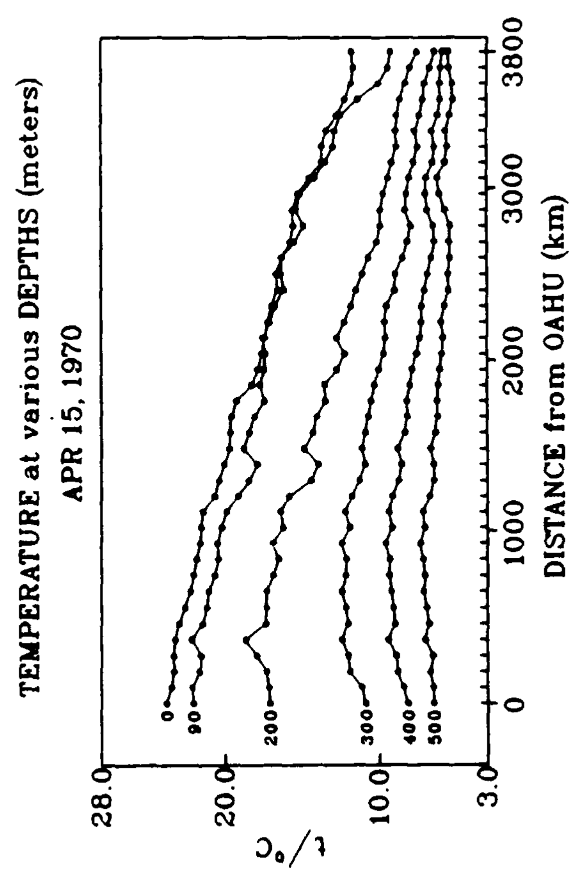
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
APR 15, 1970
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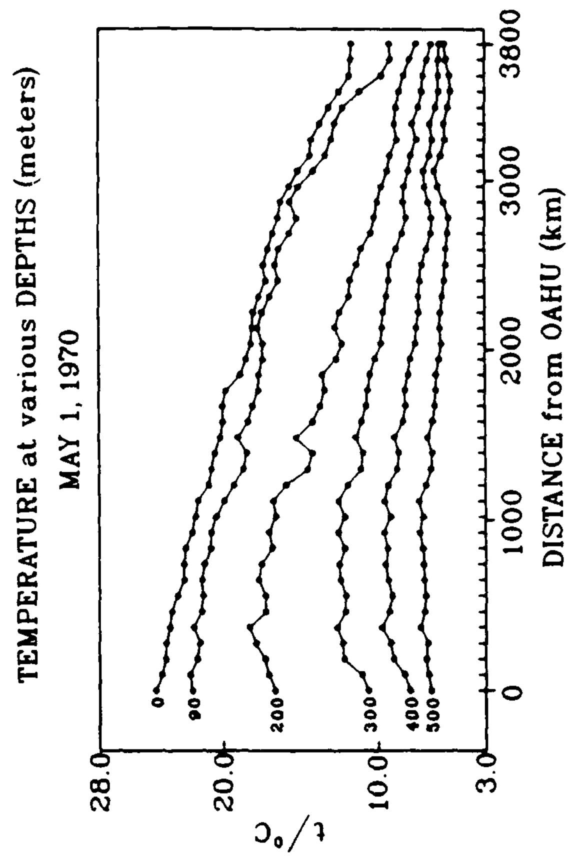
TEMPERATURE at various DEPTHS (meters)
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TEMPERATURE at various DEPTHS (meters)
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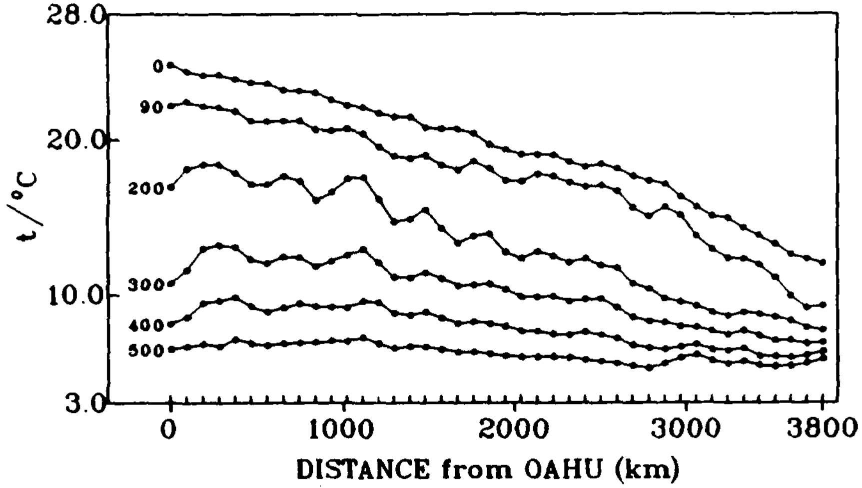

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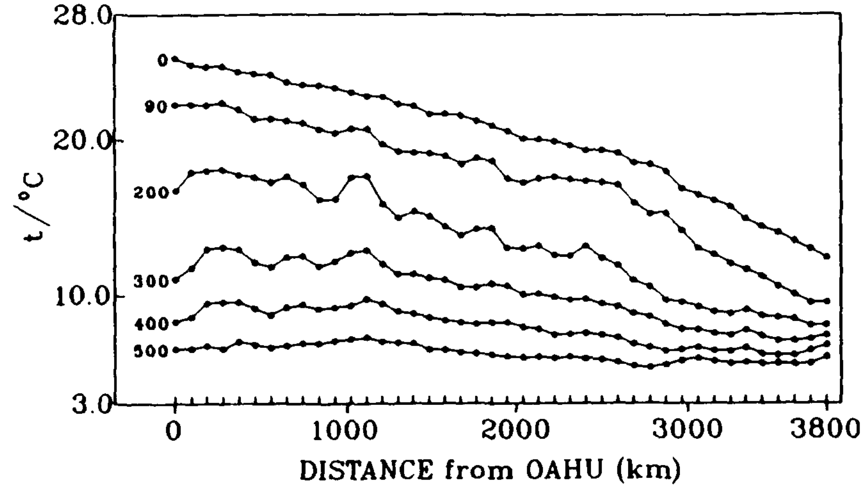

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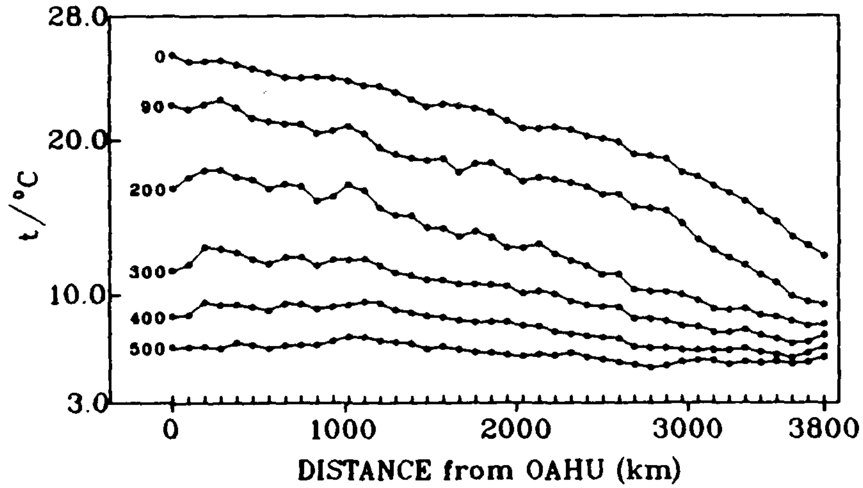

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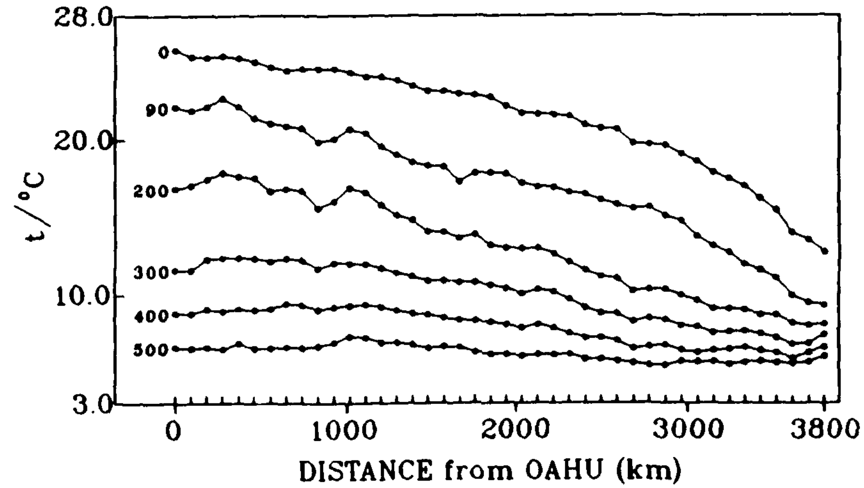

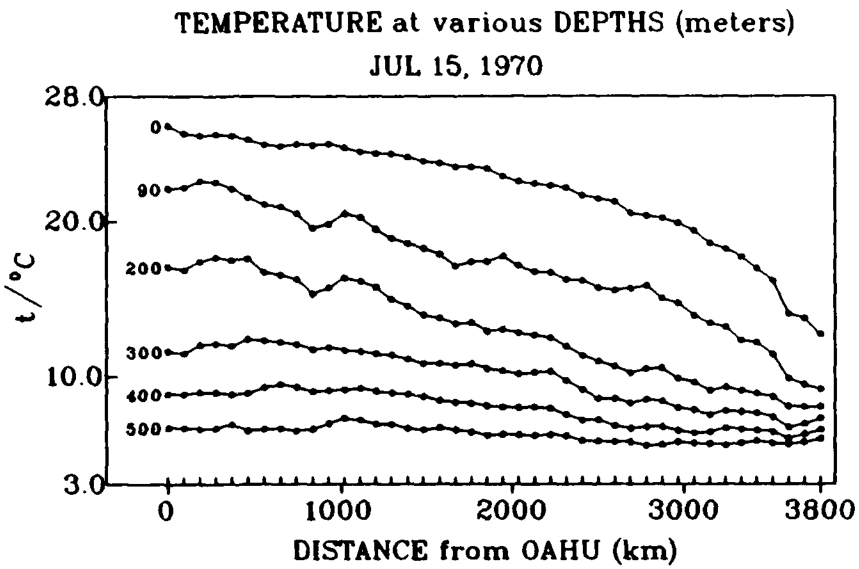
TEMPERATURE at various DEPTHS (meters)
JUL 15, 1970
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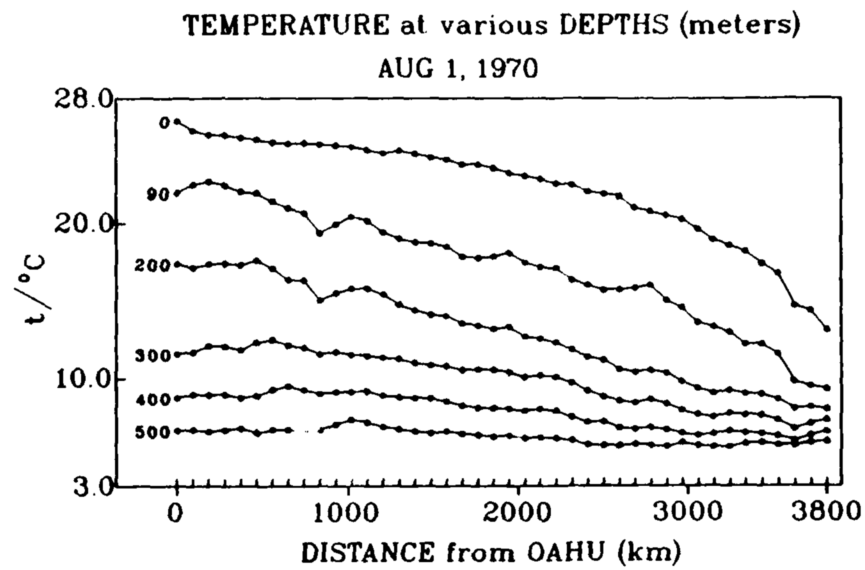
TEMPERATURE at various DEPTHS (meters)
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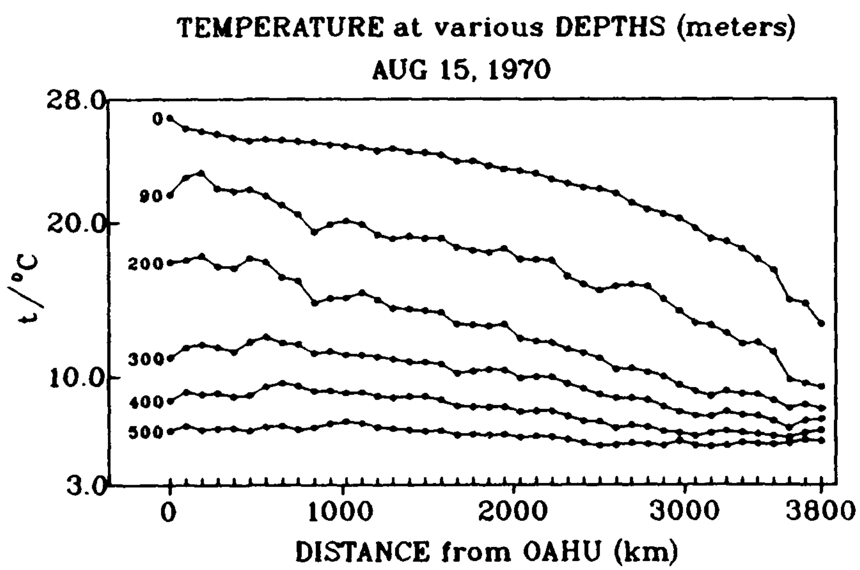
TEMPERATURE at various DEPTHS (meters)
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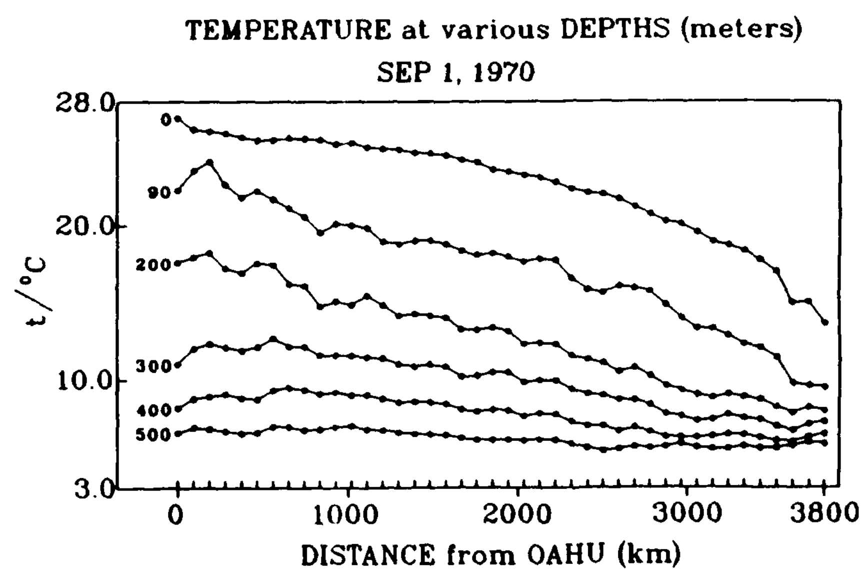
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
SEP 1, 1970
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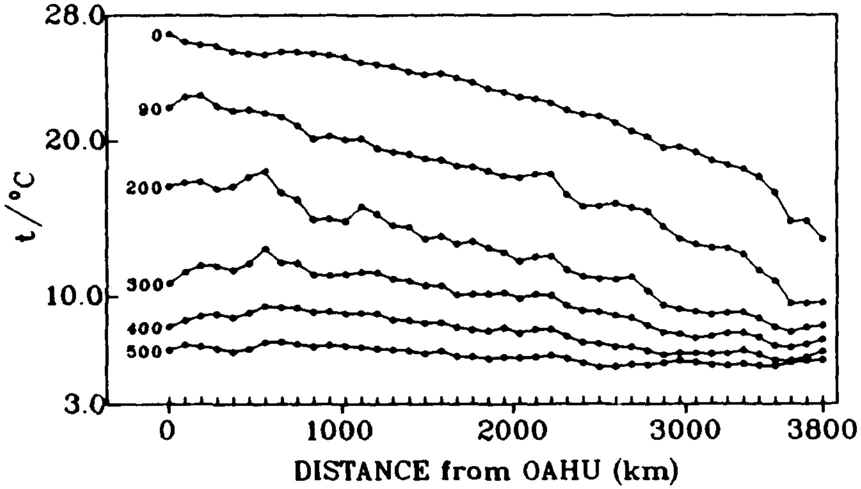
DISTANCE from OAHU (km)

TEMPERATURE at various DEPTHS (meters)
SEP 15, 1970



TEMPERATURE at various DEPTHS (meters)
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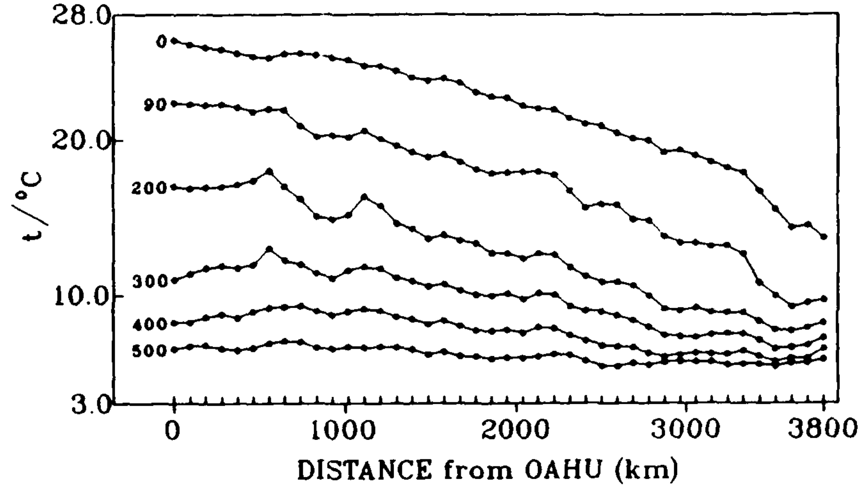

TEMPERATURE at various DEPTHS (meters)
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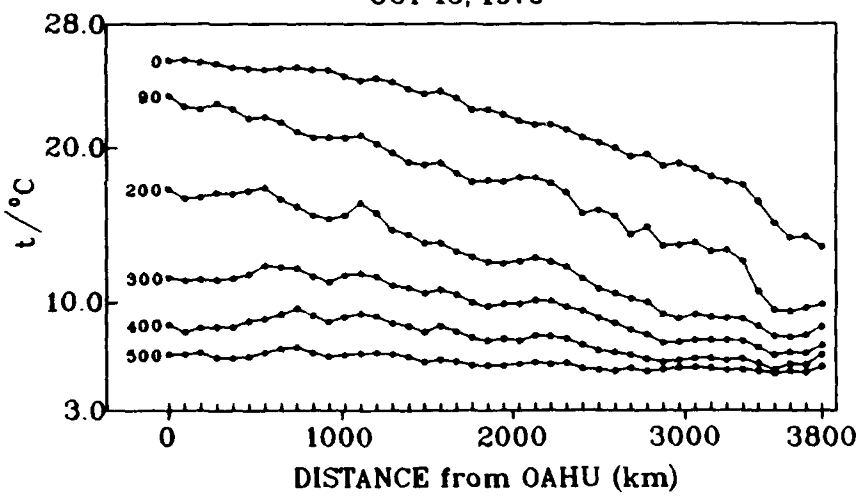

TEMPERATURE at various DEPTHS (meters)
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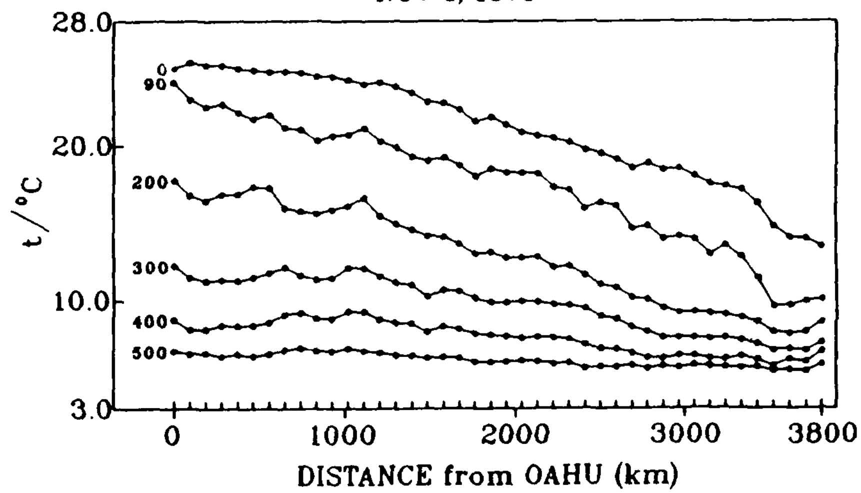

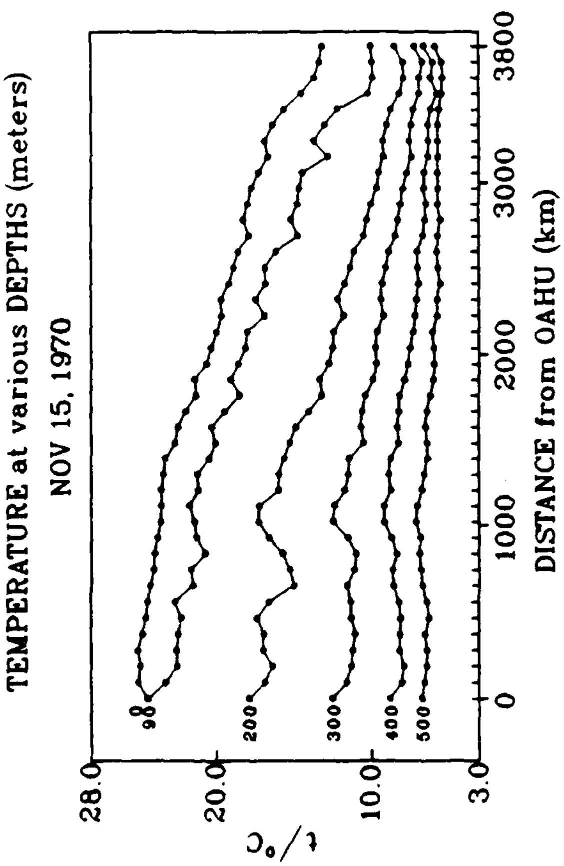
TEMPERATURE at various DEPTHS (meters)
NOV 15, 1970
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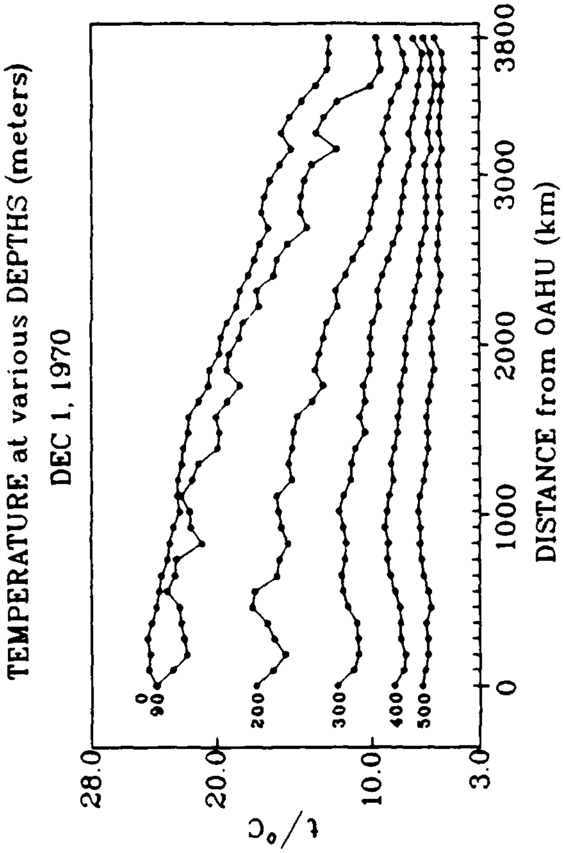
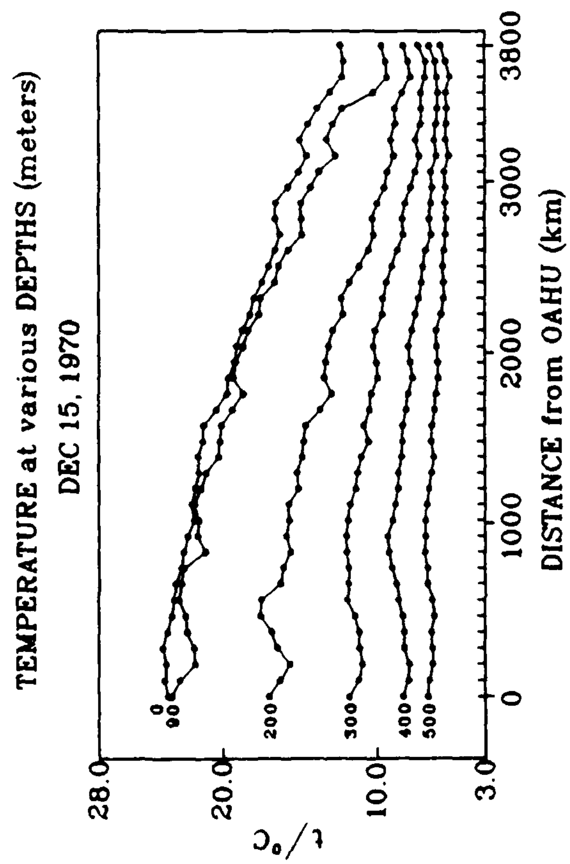
3800
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
DEC 1, 1970
t/°C
28.0
20.0
10.0
3.0
0
90
200
300
400
500
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
DEC 15, 1970
t/°C
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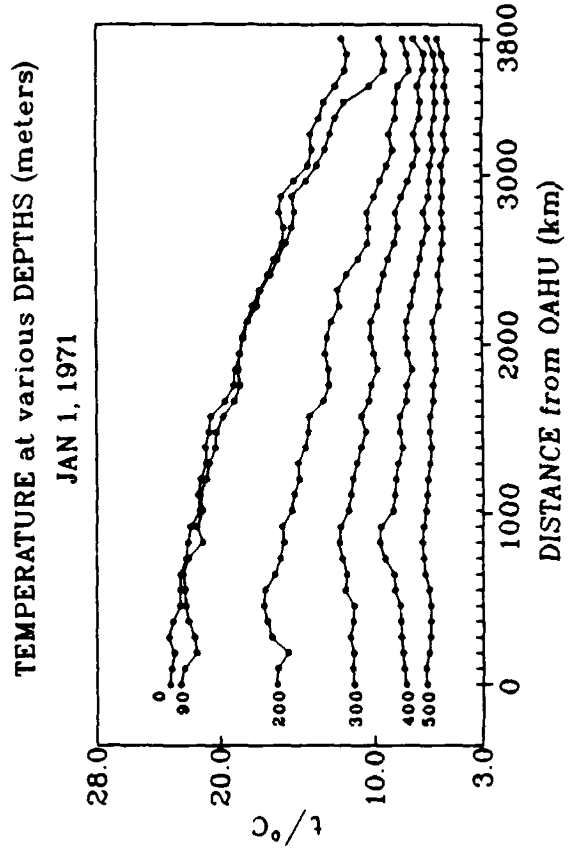
3800
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
JAN 1, 1971
t/°C
28.0
20.0
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90
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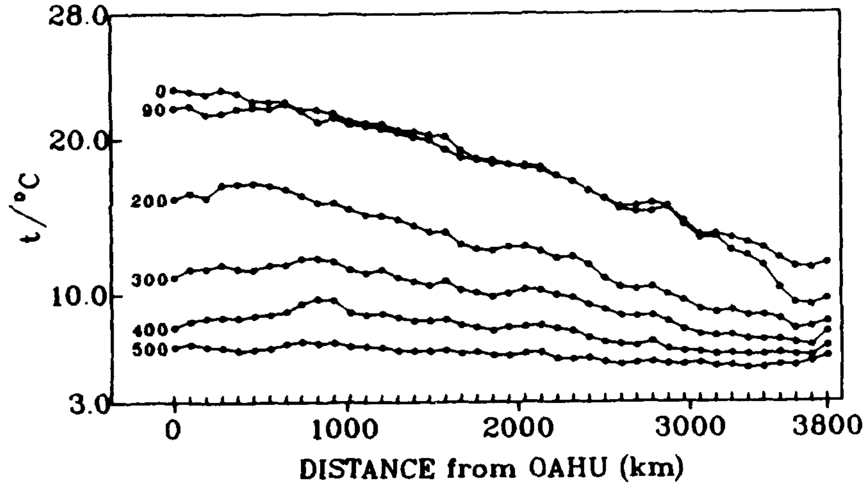
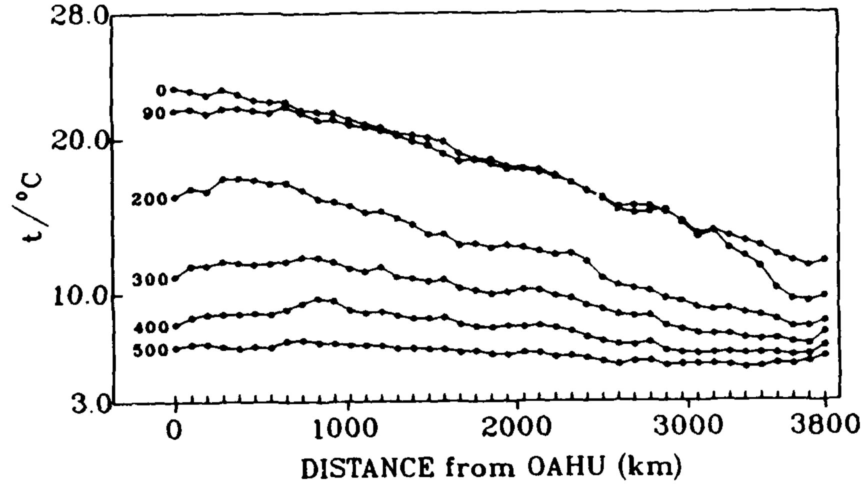
1000
2000
3000
3800
DISTANCE from OAHU (km)

TEMPERATURE at various DEPTHS (meters)
JAN 15, 1971



TEMPERATURE at various DEPTHS (meters)
FEB 1, 1971



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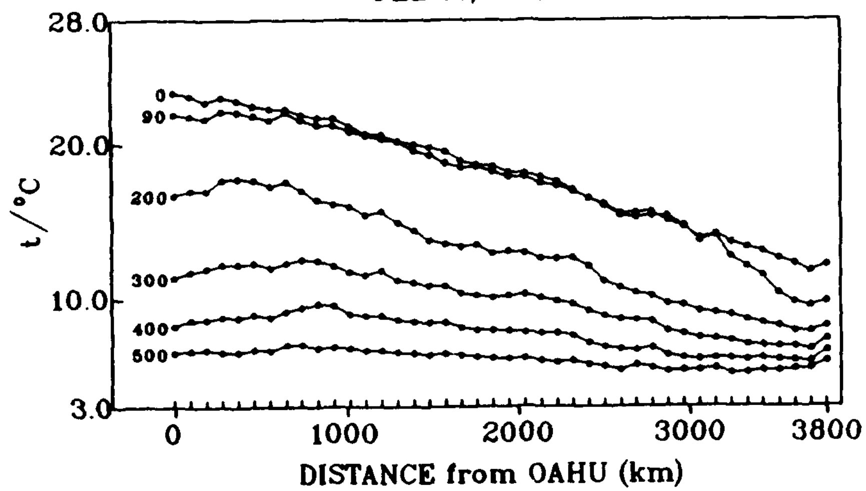
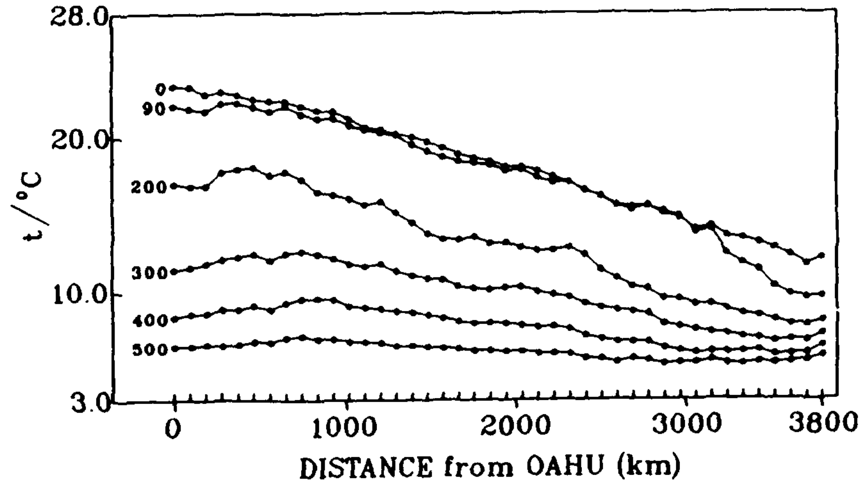
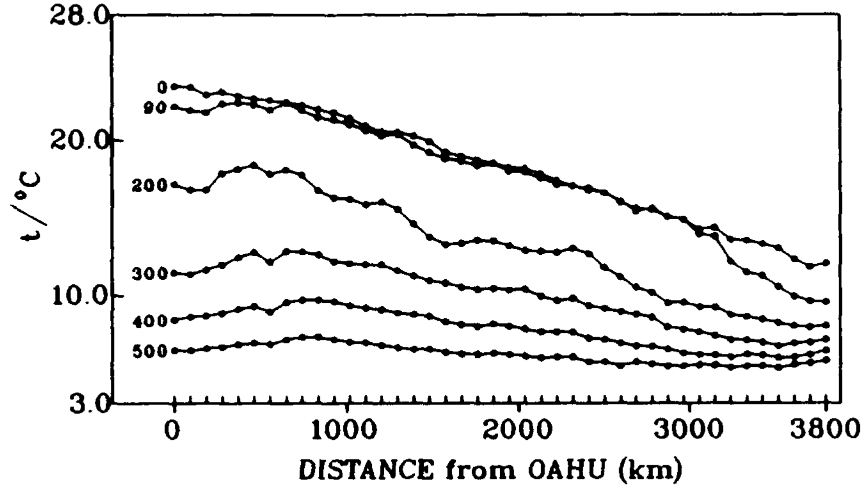
FEB 15, 1971



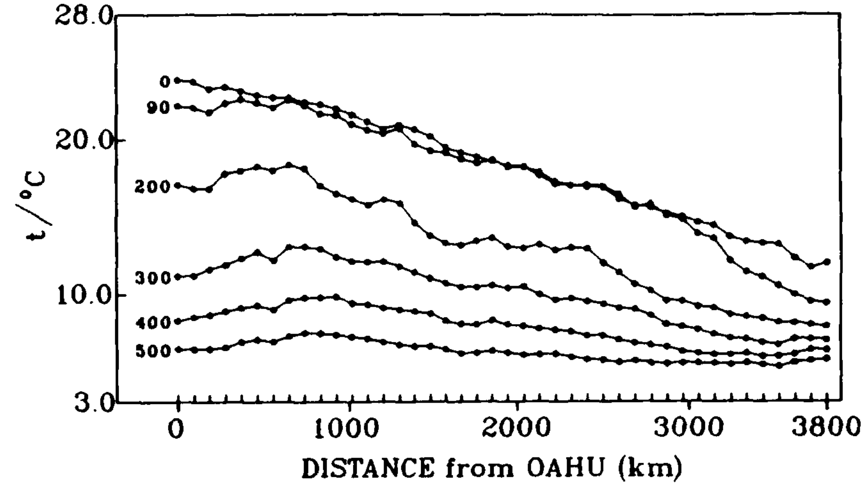
TEMPERATURE at various DEPTHS (meters)
MAR 1, 1971



TEMPERATURE at various DEPTHS (meters)
MAR 15, 1971



TEMPERATURE at various DEPTHS (meters)
APR 1, 1971



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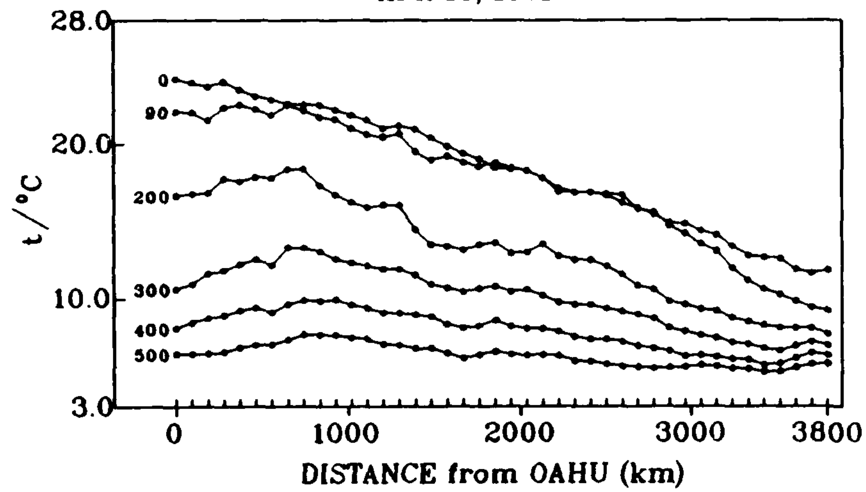
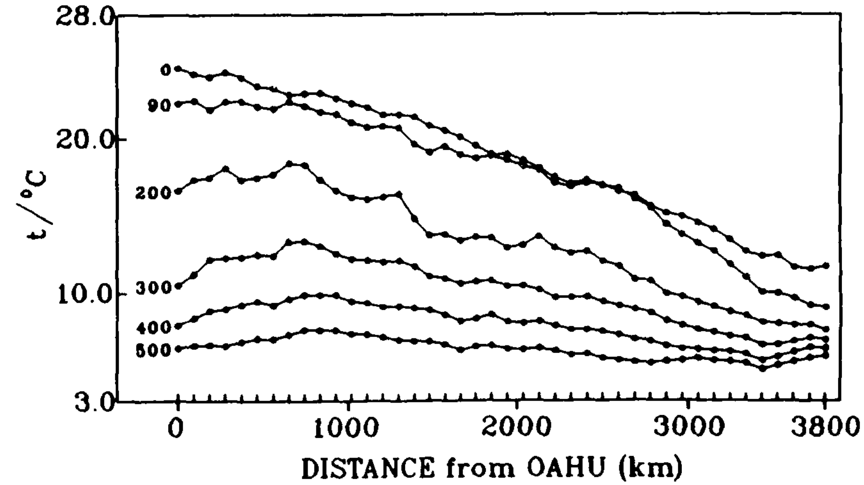


TEMPERATURE at various DEPTHS (meters)
MAY 1, 1971



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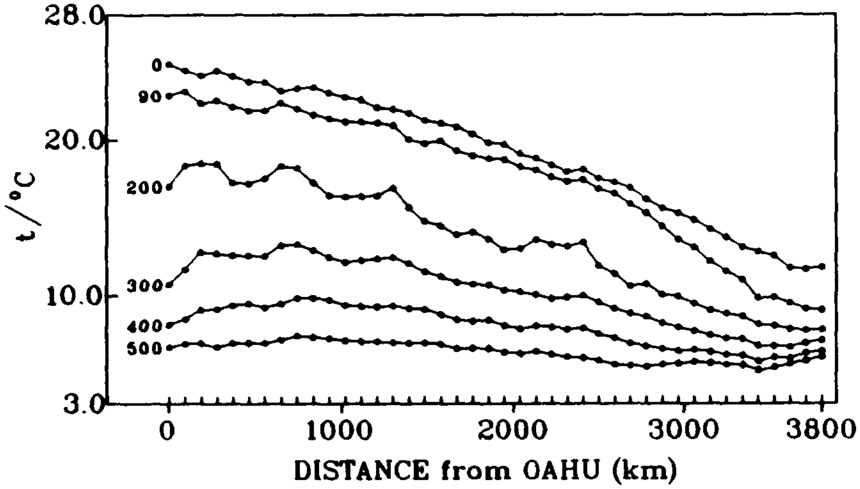
MAY 15, 1971



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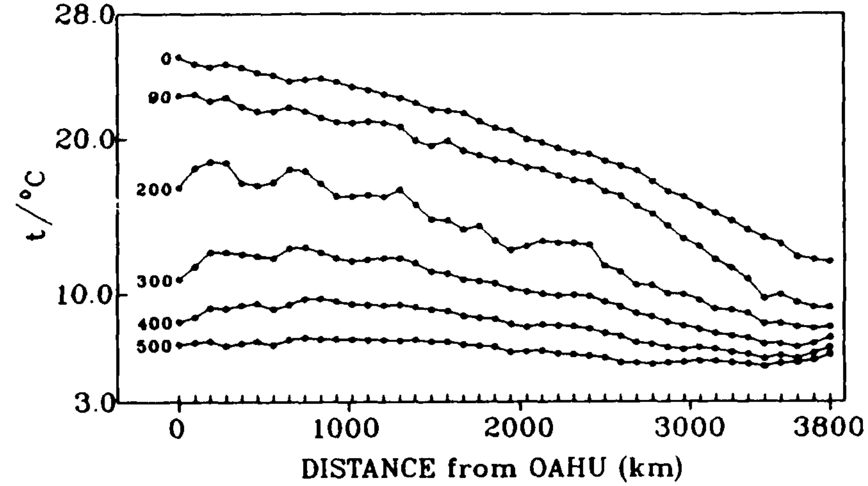
JUN 1, 1971



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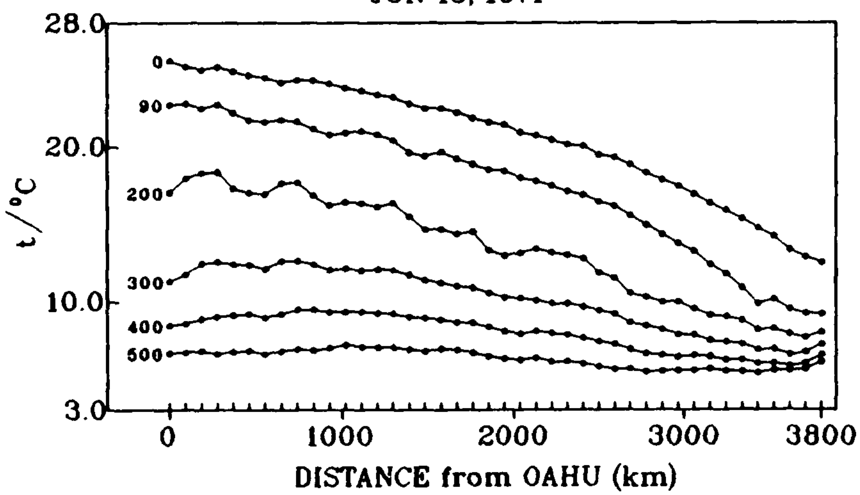
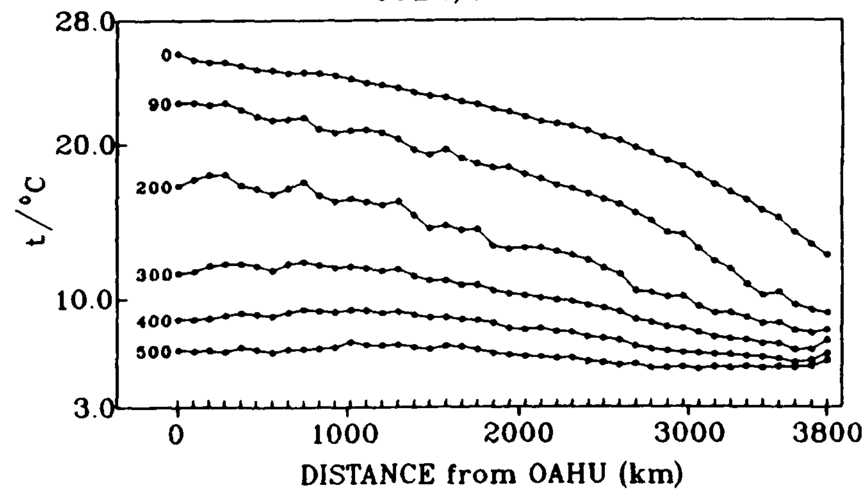
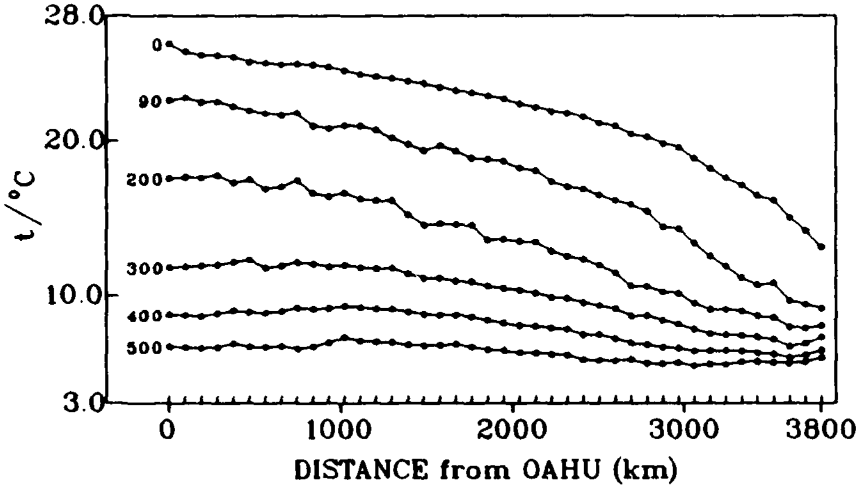
JUN 15, 1971



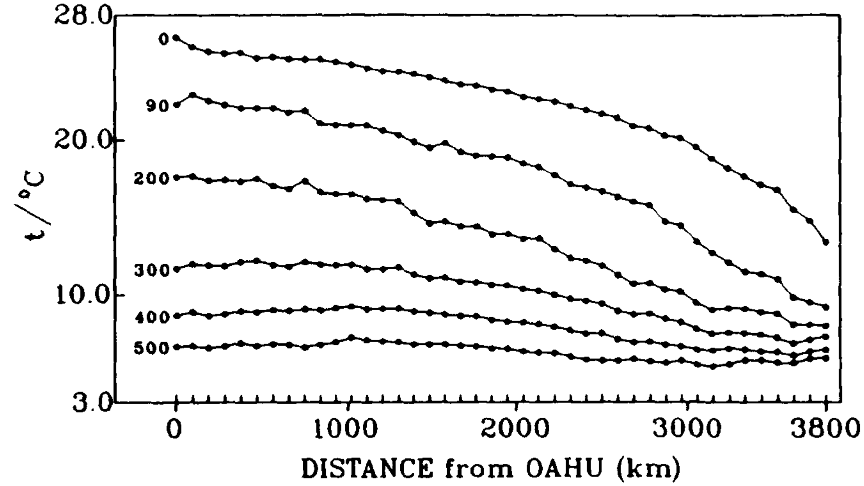
TEMPERATURE at various DEPTHS (meters)
JUL 1, 1971



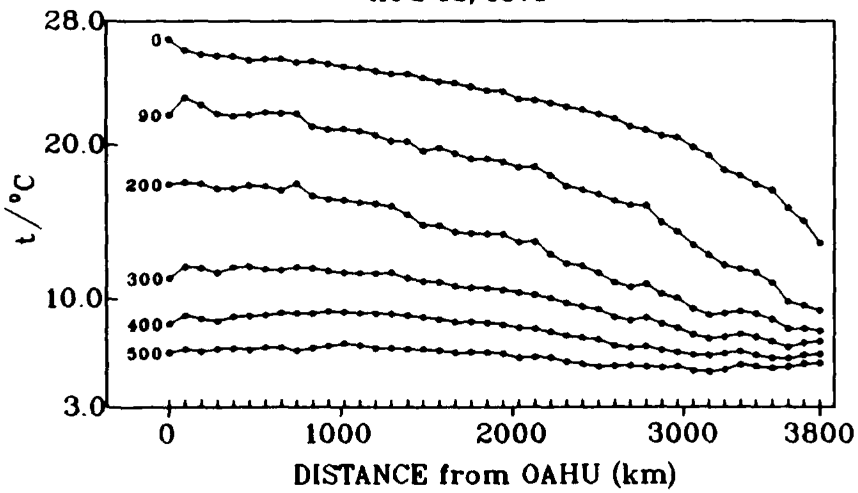
TEMPERATURE at various DEPTHS (meters)
JUL 15, 1971



TEMPERATURE at various DEPTHS (meters)
AUG 1, 1971



TEMPERATURE at various DEPTHS (meters)
AUG 15, 1971



TEMPERATURE at various DEPTHS (meters)
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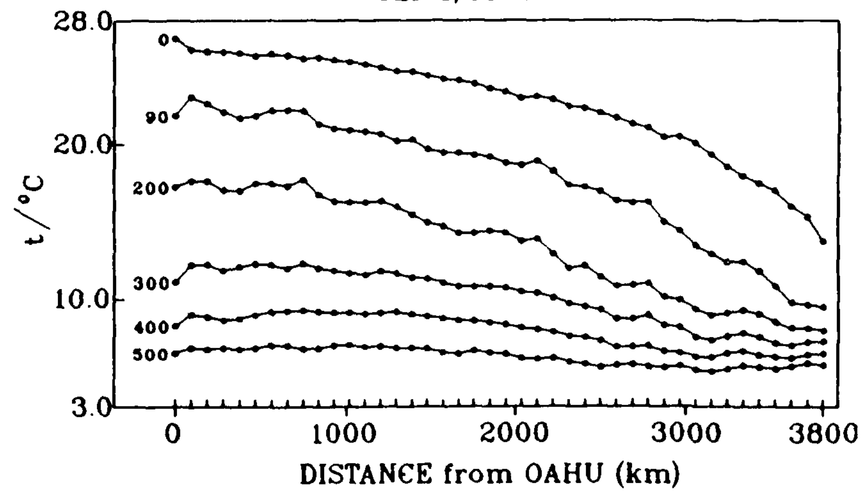
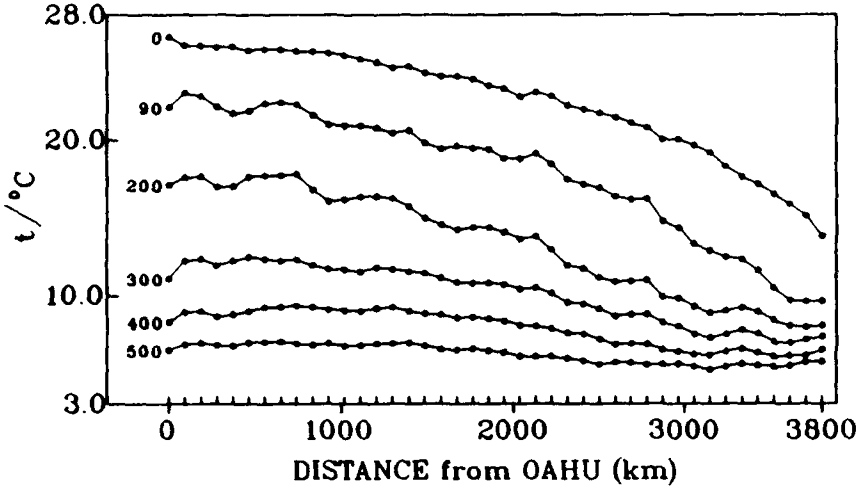
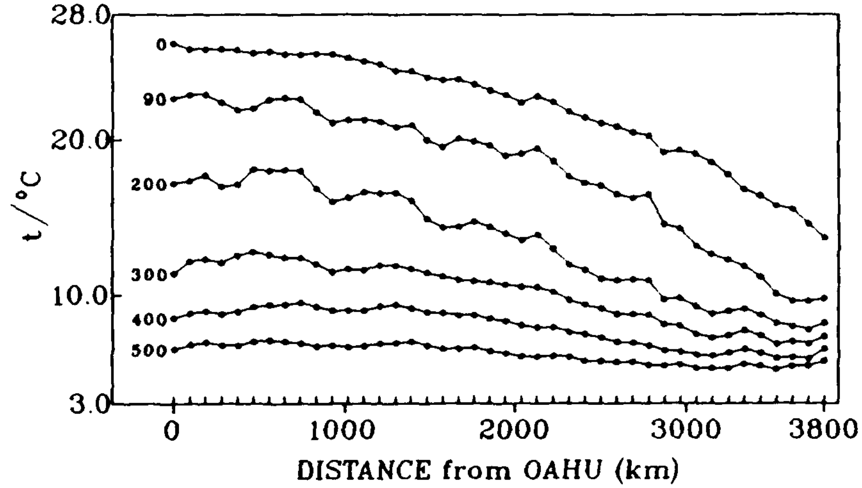


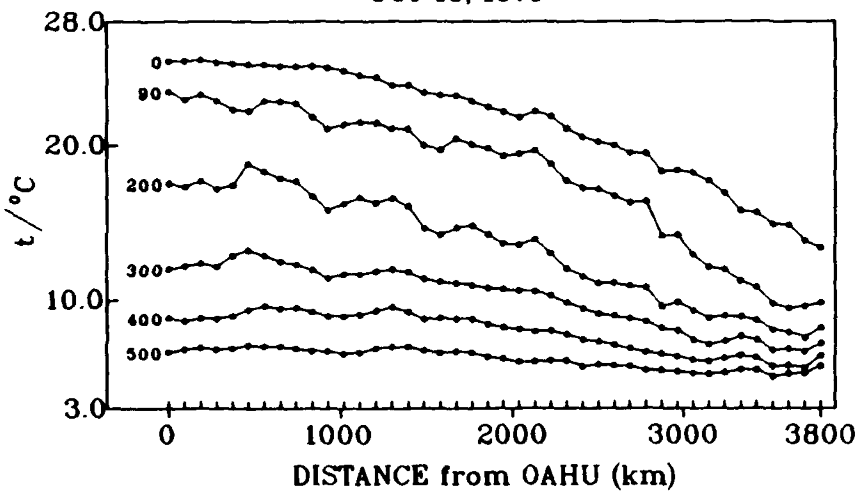
TEMPERATURE at various DEPTHS (meters)
SEP 15, 1971



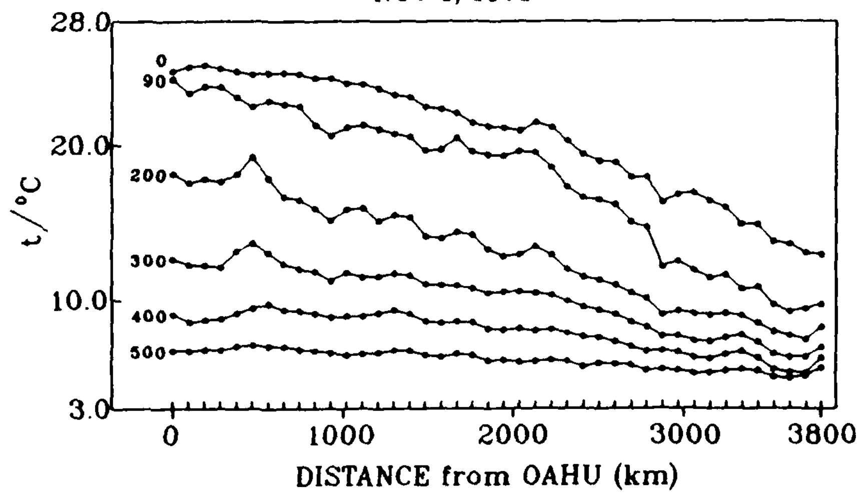
TEMPERATURE at various DEPTHS (meters)
OCT 1, 1971



TEMPERATURE at various DEPTHS (meters)
OCT 15, 1971



TEMPERATURE at various DEPTHS (meters)
NOV 1, 1971



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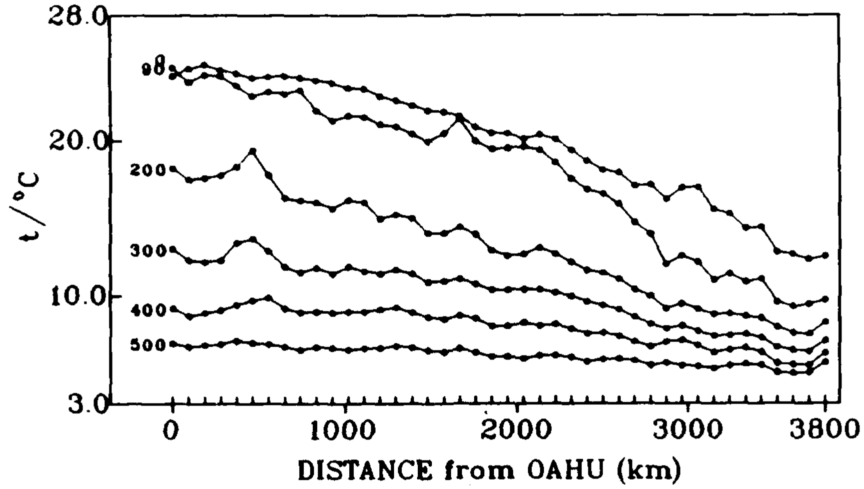

TEMPERATURE at various DEPTHS (meters)

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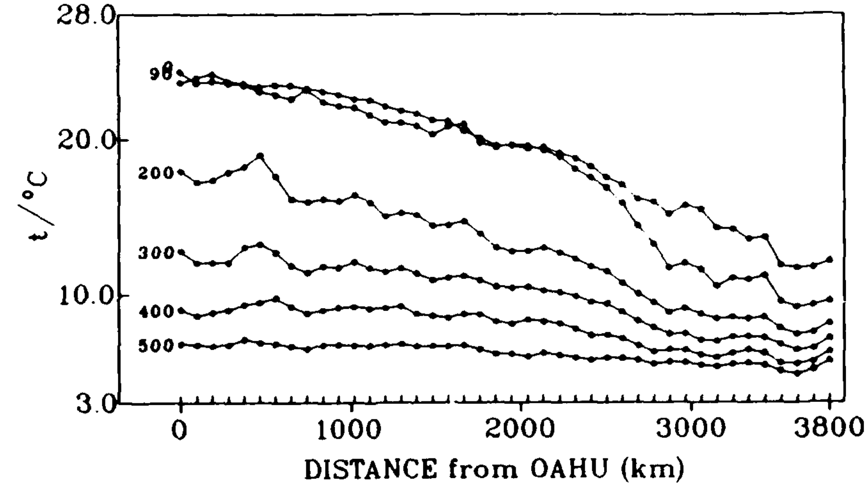

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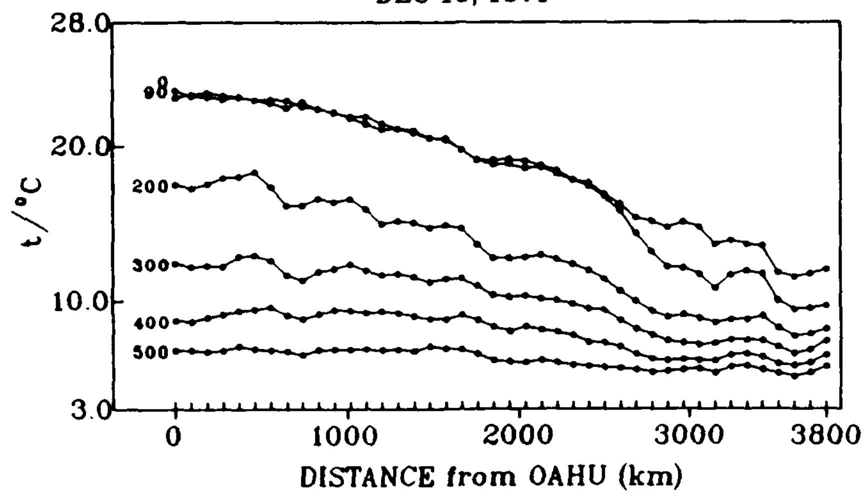
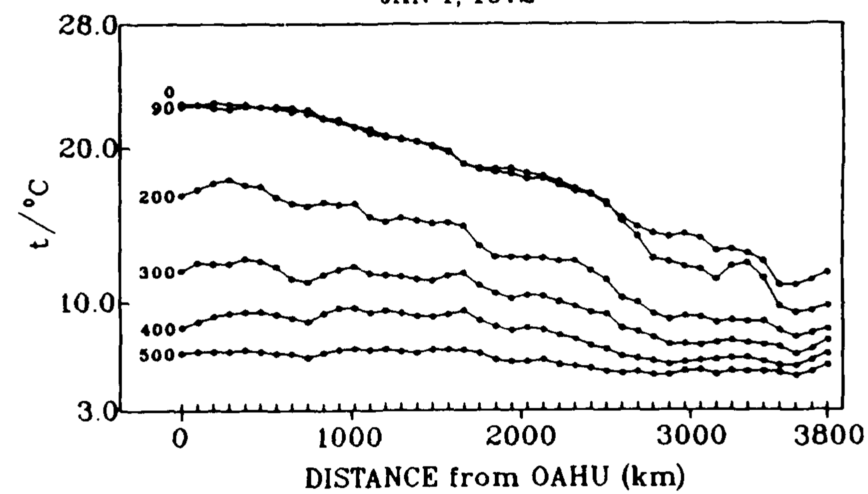


TEMPERATURE at various DEPTHS (meters)

JAN 1, 1972



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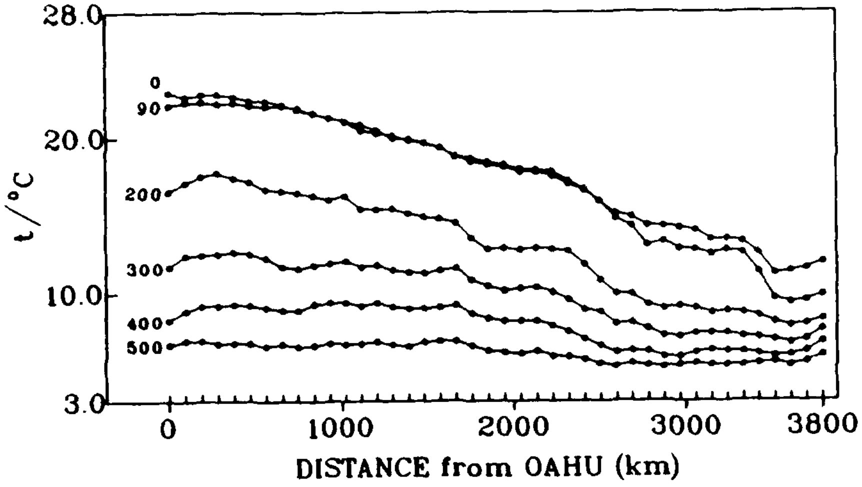

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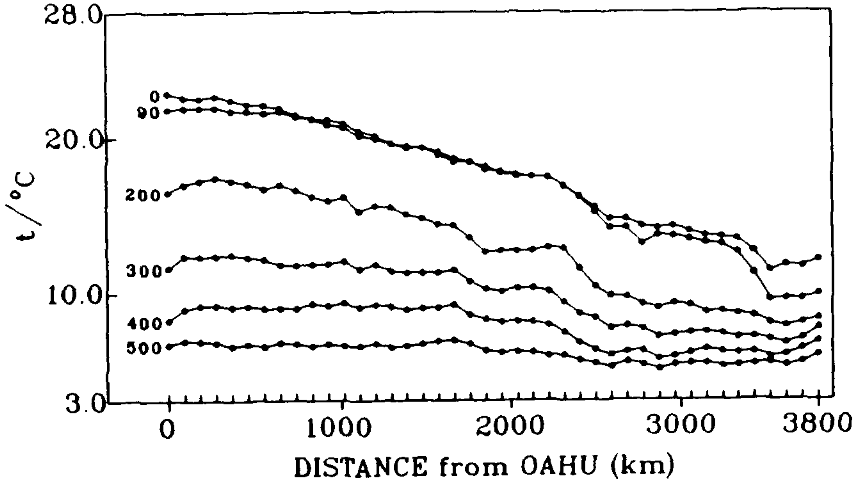

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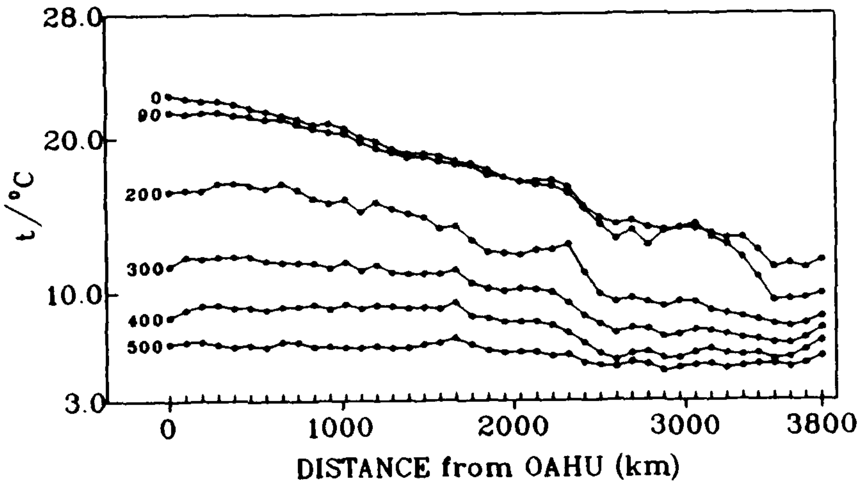

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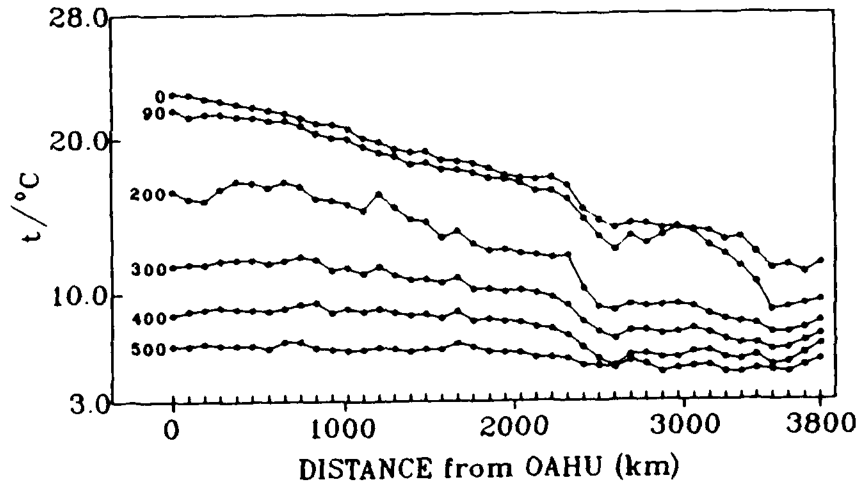

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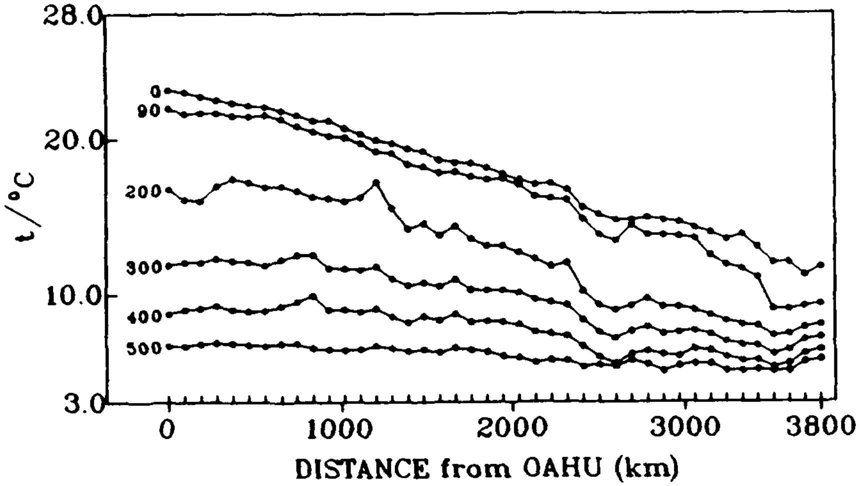

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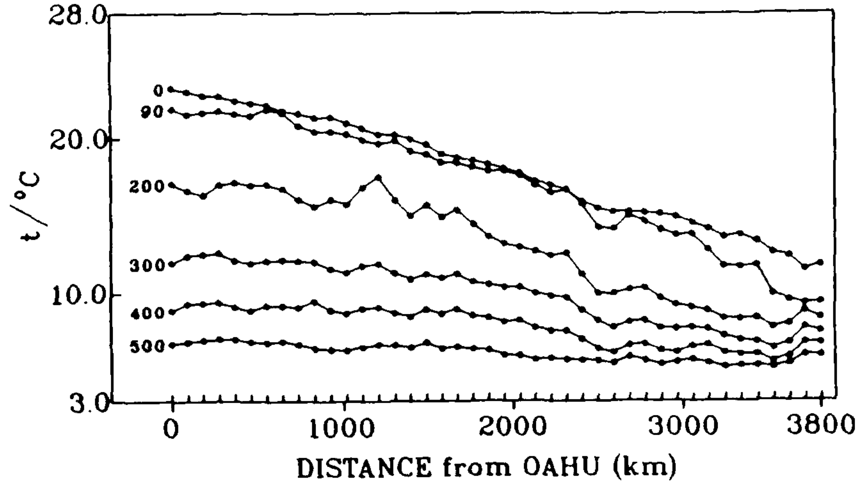
APR 1, 1972



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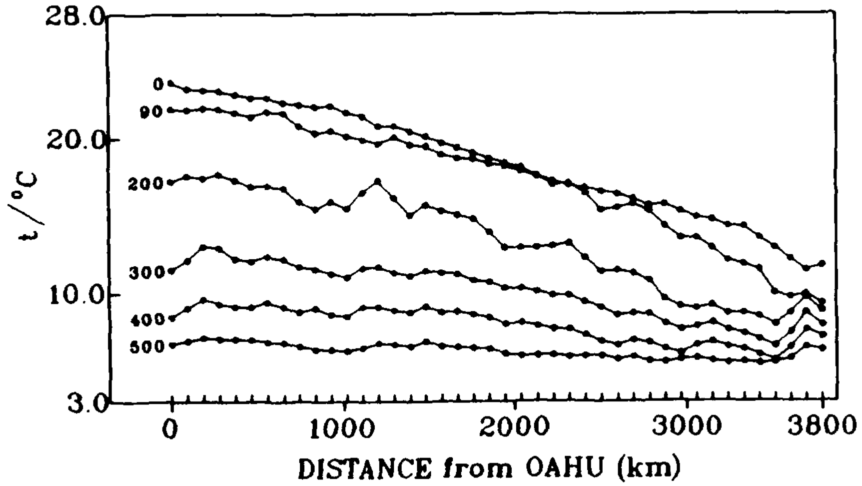

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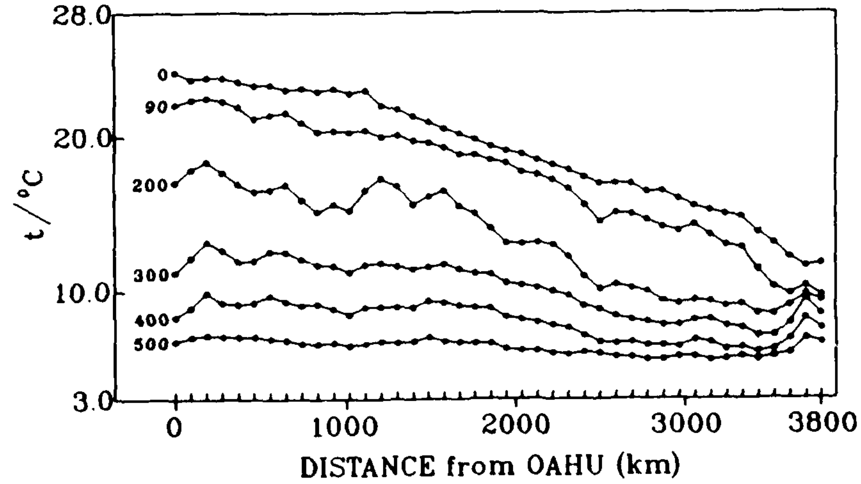

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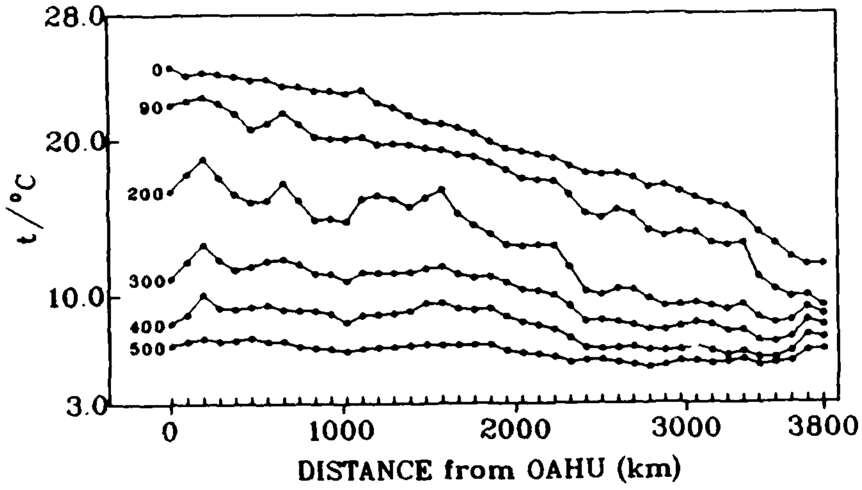

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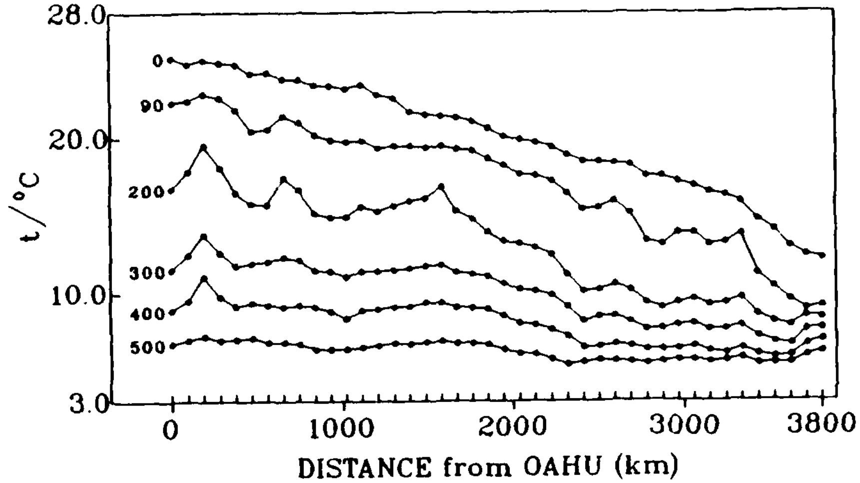

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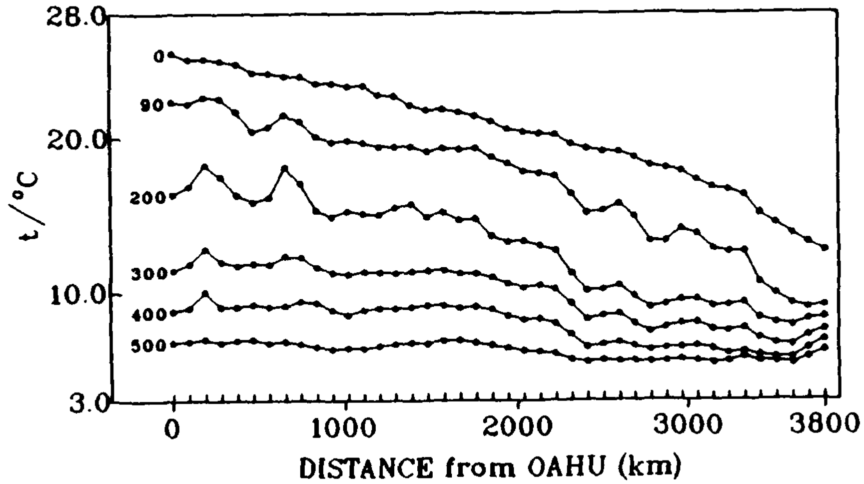

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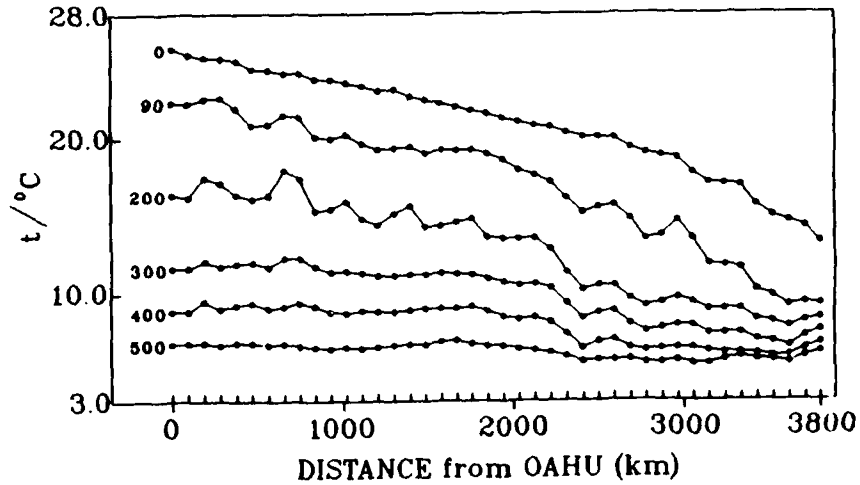

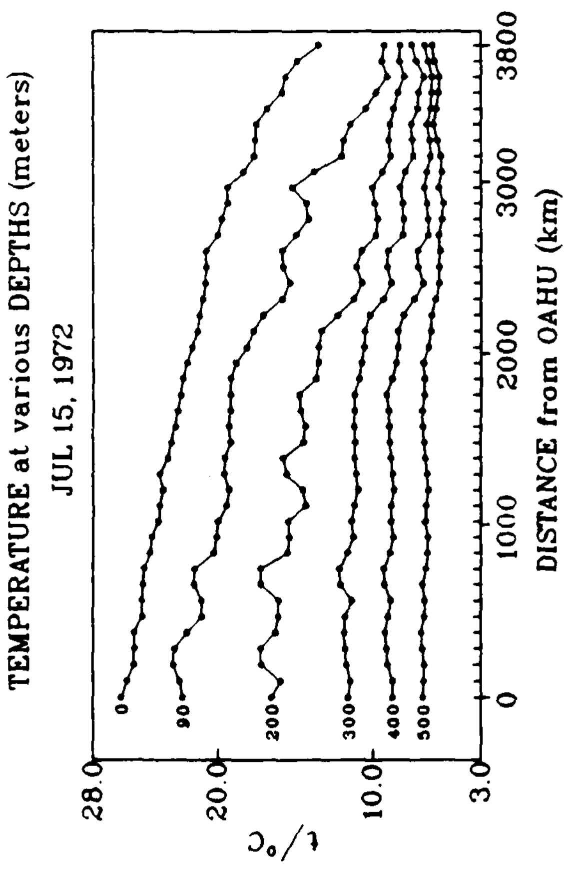
TEMPERATURE at various DEPTHS (meters)
JUL 15, 1972
t/°C
28.0
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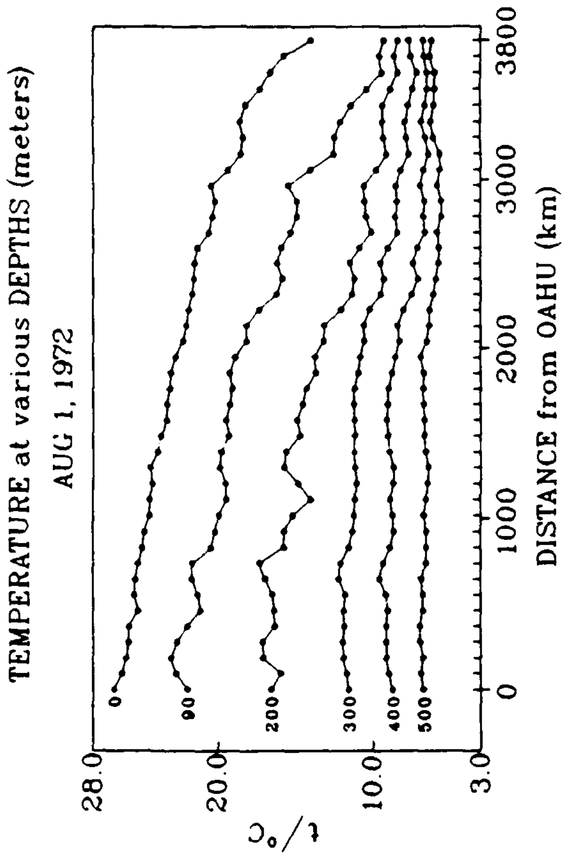
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
AUG 1, 1972
t/°C
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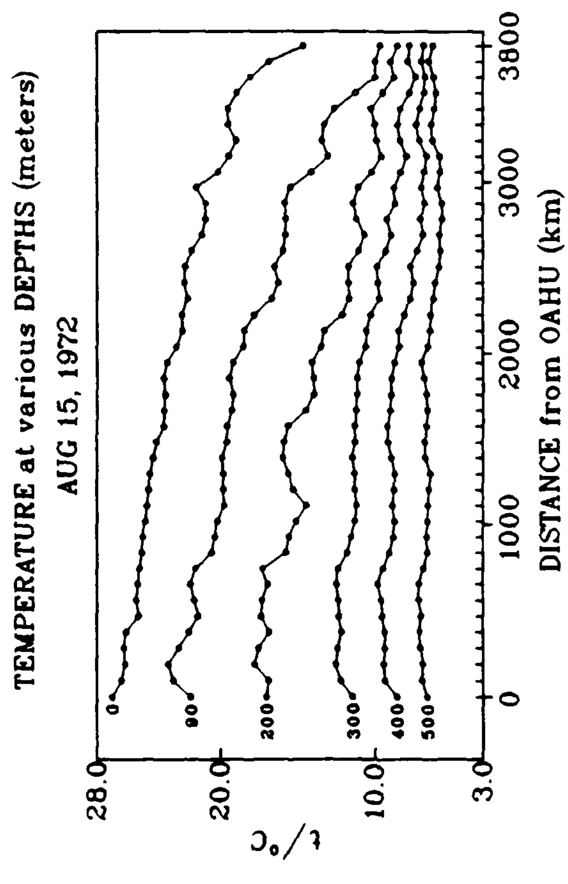
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
AUG 15, 1972
t/°C
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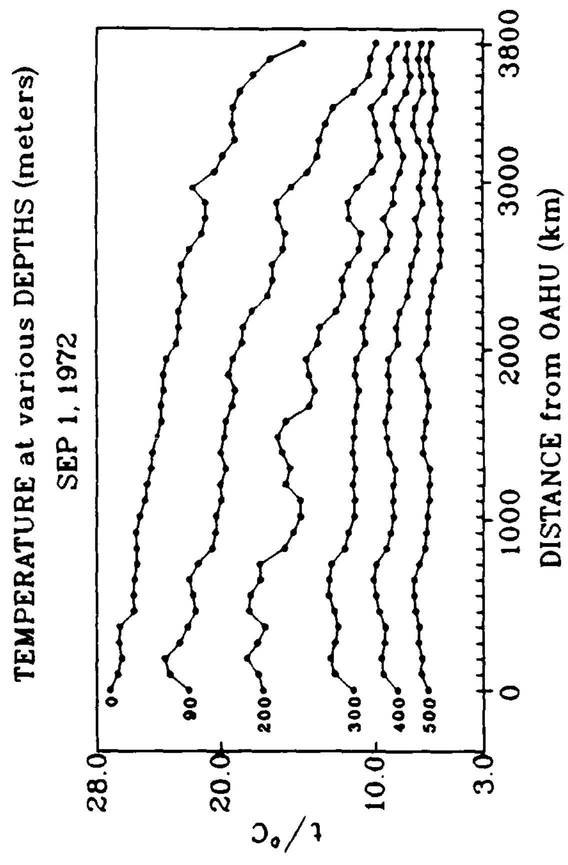
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
SEP 1, 1972
t/°C
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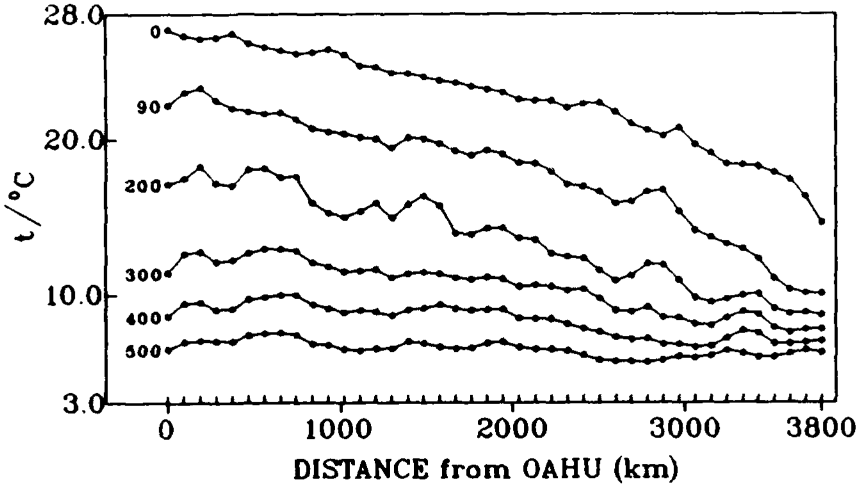
DISTANCE from OAHU (km)

TEMPERATURE at various DEPTHS (meters)
SEP 15, 1972



TEMPERATURE at various DEPTHS (meters)
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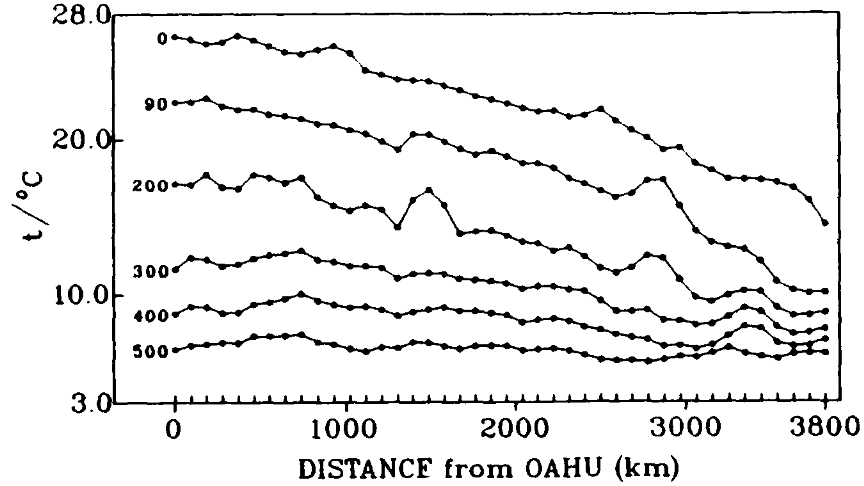

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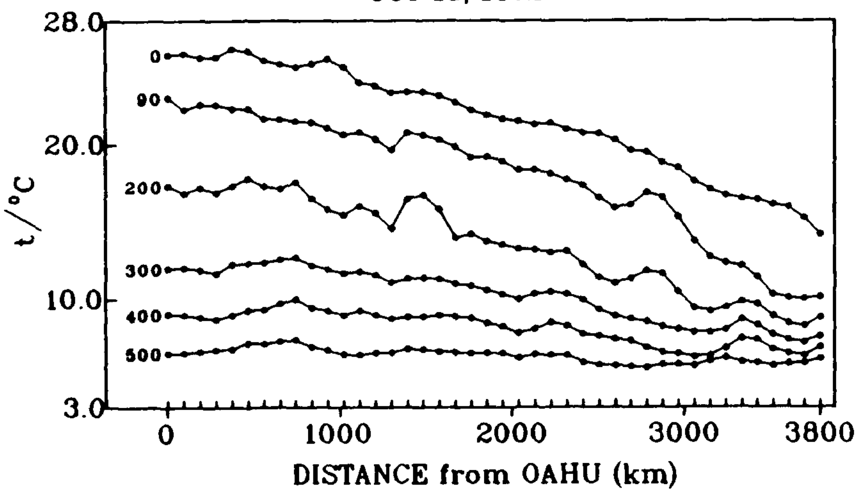
OCT 15, 1972



TEMPERATURE at various DEPTHS (meters)
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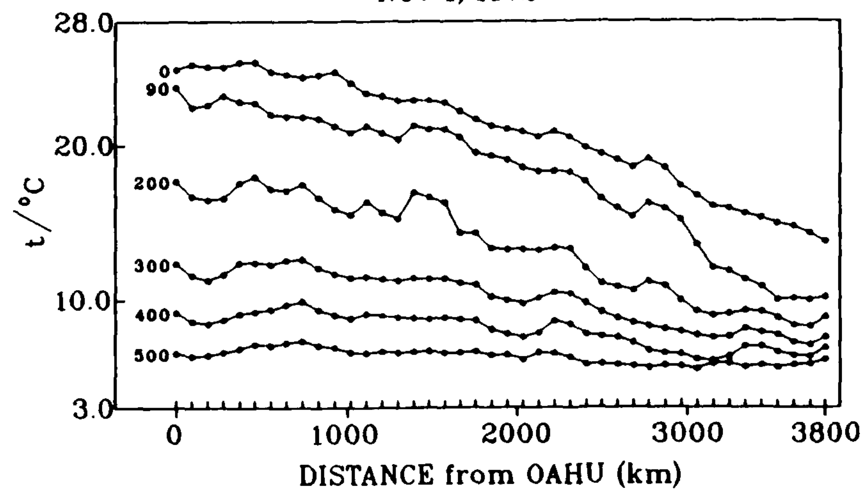

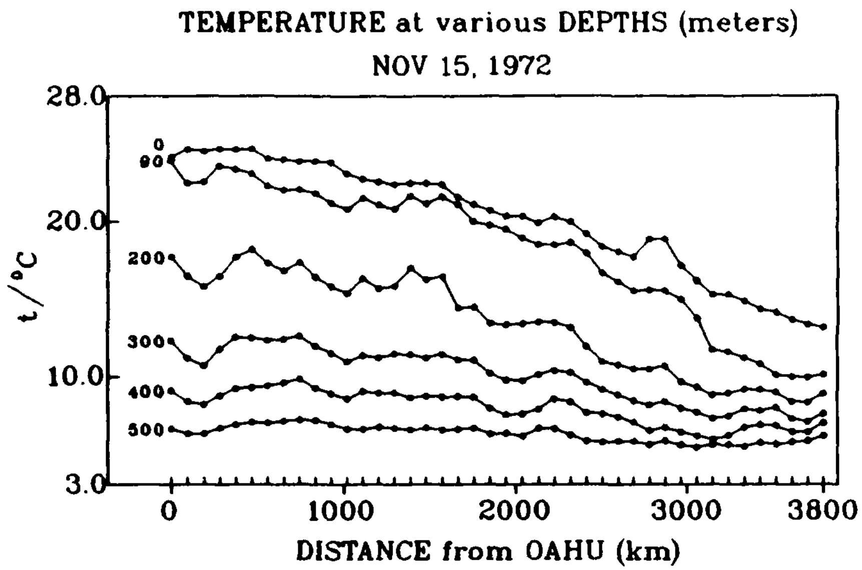
TEMPERATURE at various DEPTHS (meters)
NOV 15, 1972
t/°C
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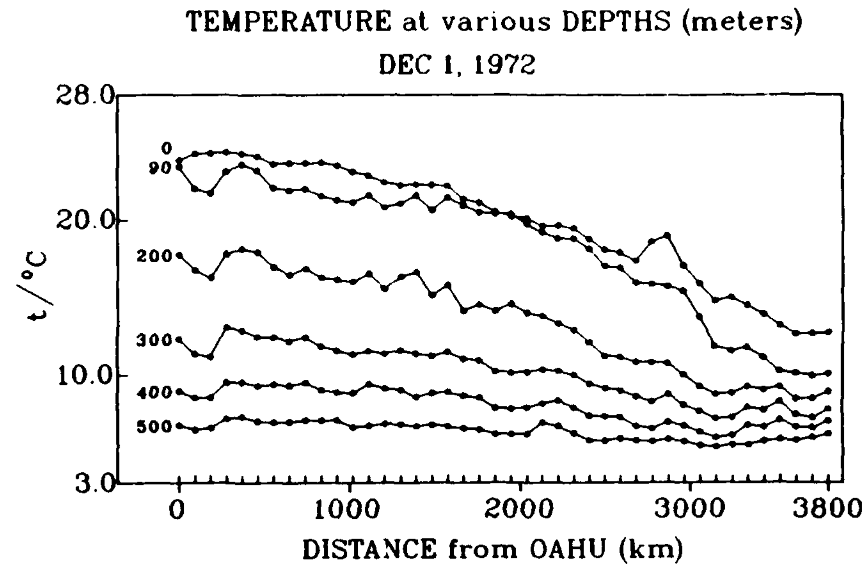
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
DEC 1, 1972
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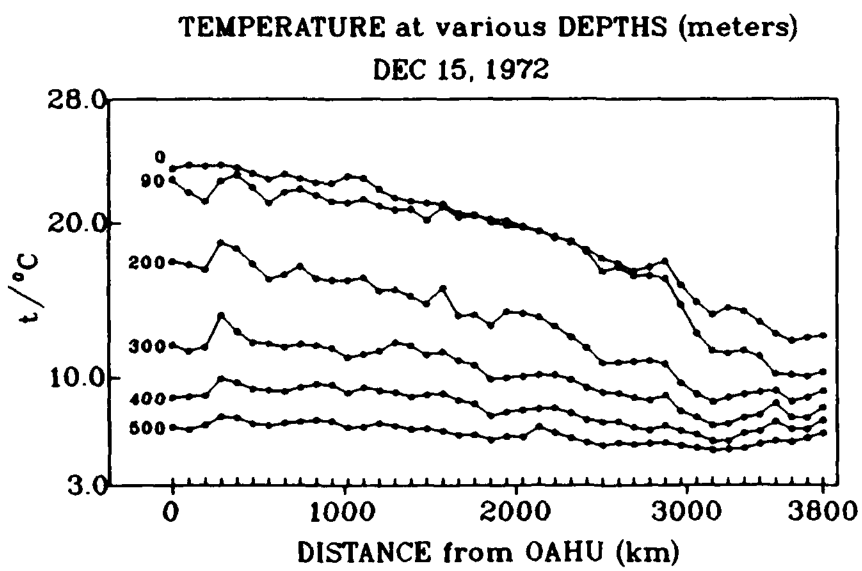
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
DEC 15, 1972
t/°C
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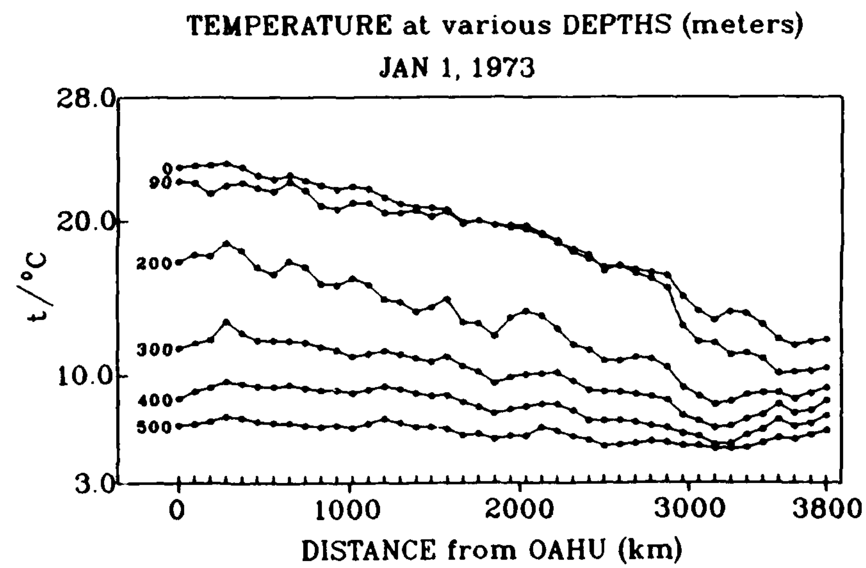
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
JAN 1, 1973
t/°C
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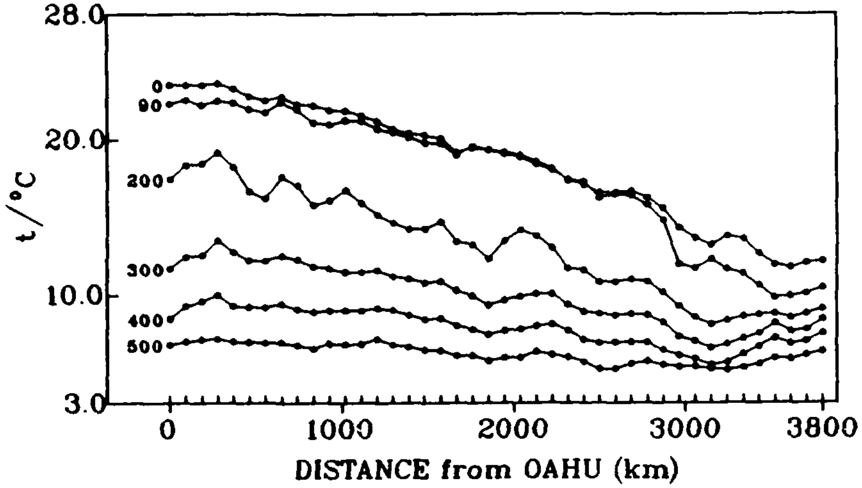
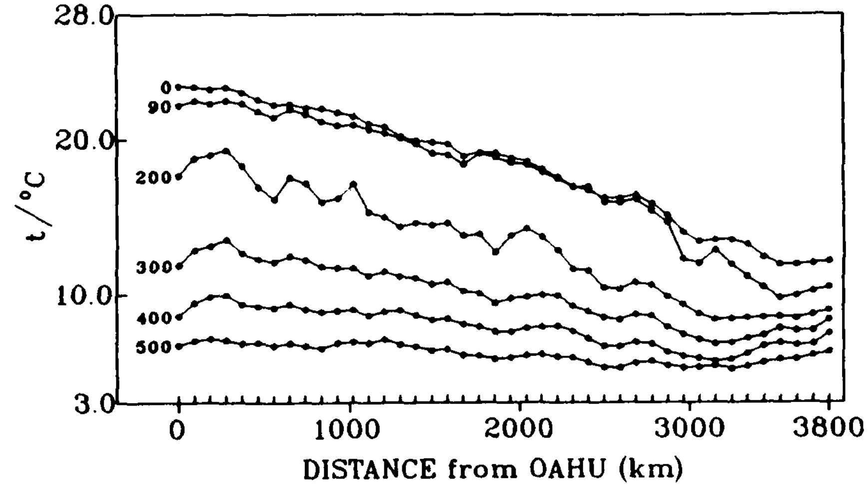
DISTANCE from OAHU (km)

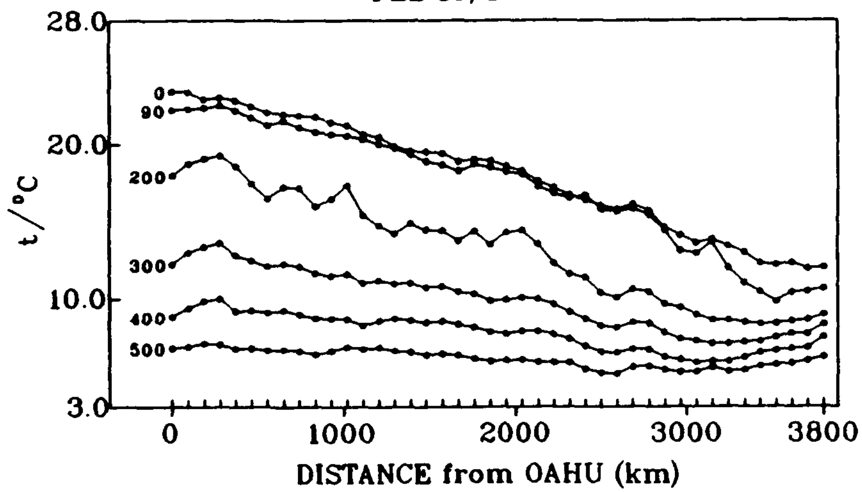
TEMPERATURE at various DEPTHS (meters)
JAN 15, 1973



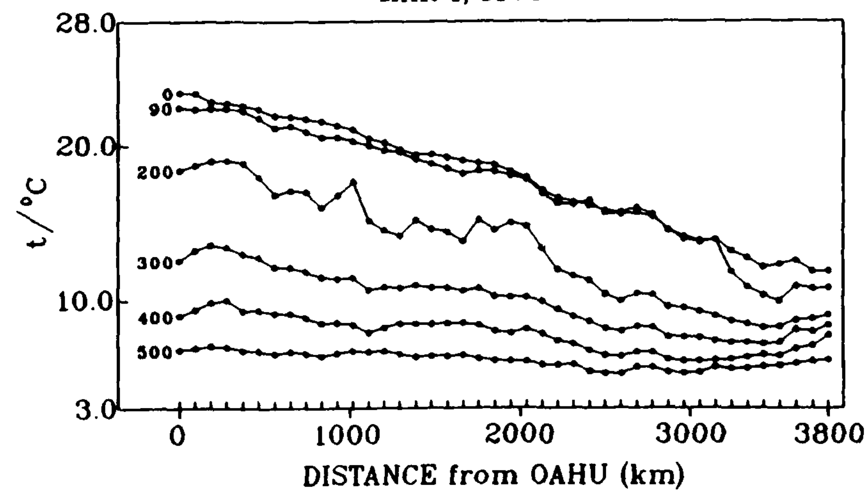
TEMPERATURE at various DEPTHS (meters)
FEB 1, 1973



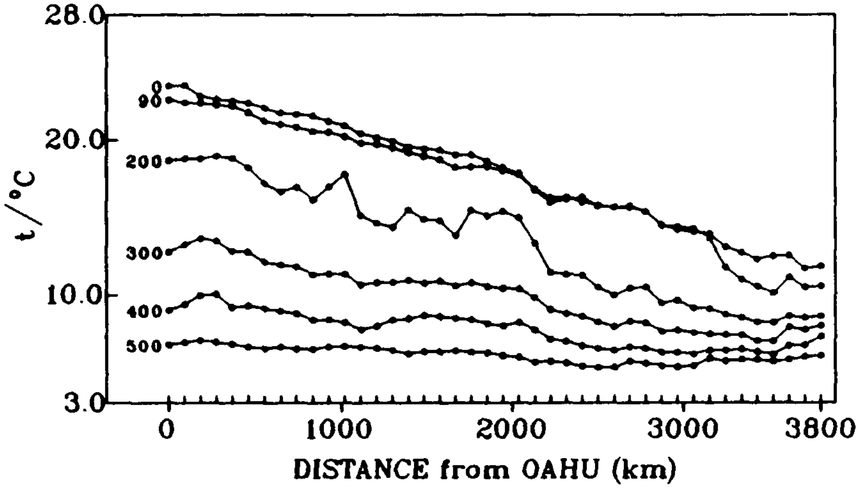
TEMPERATURE at various DEPTHS (meters)
FEB 15, 1973



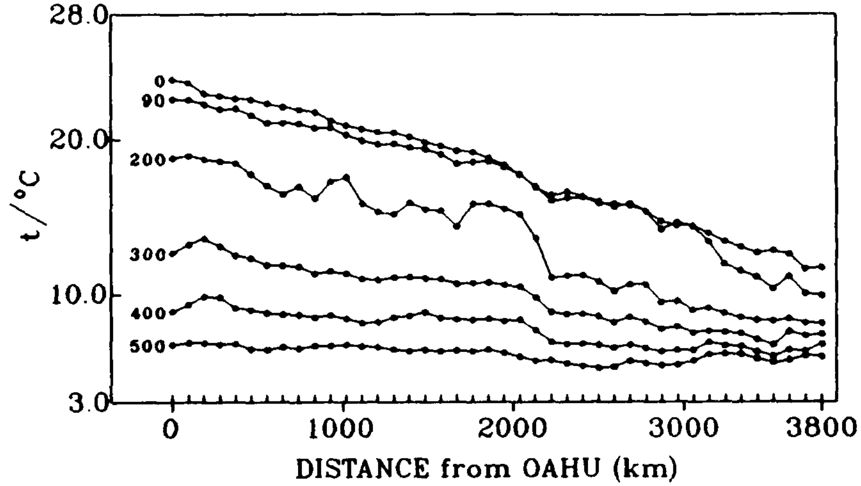
TEMPERATURE at various DEPTHS (meters)
MAR 1, 1973



TEMPERATURE at various DEPTHS (meters)
MAR 15, 1973



TEMPERATURE at various DEPTHS (meters)
APR 1, 1973



TEMPERATURE at various DEPTHS (meters)
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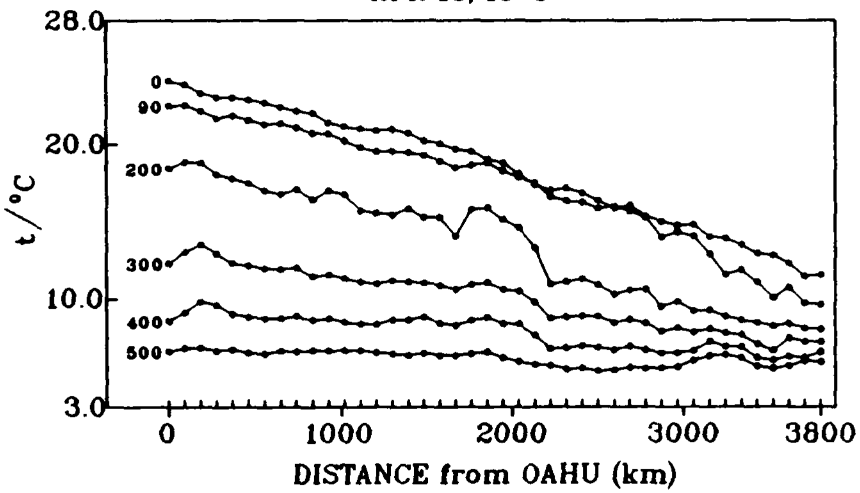
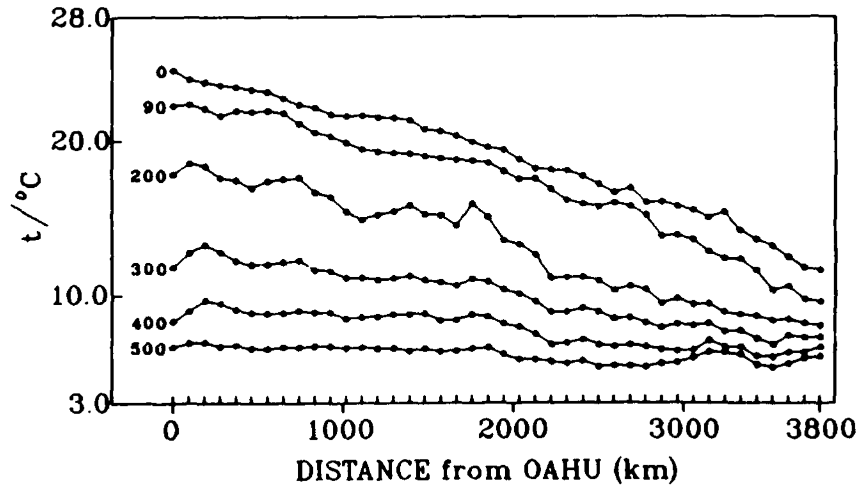
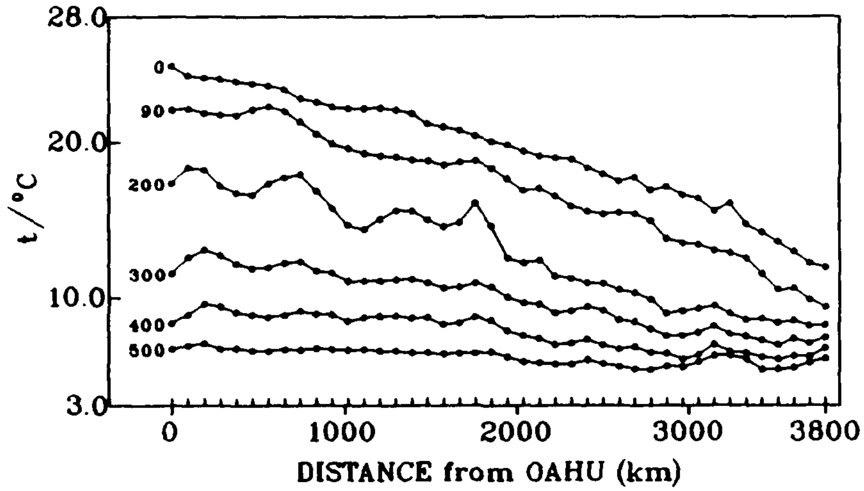


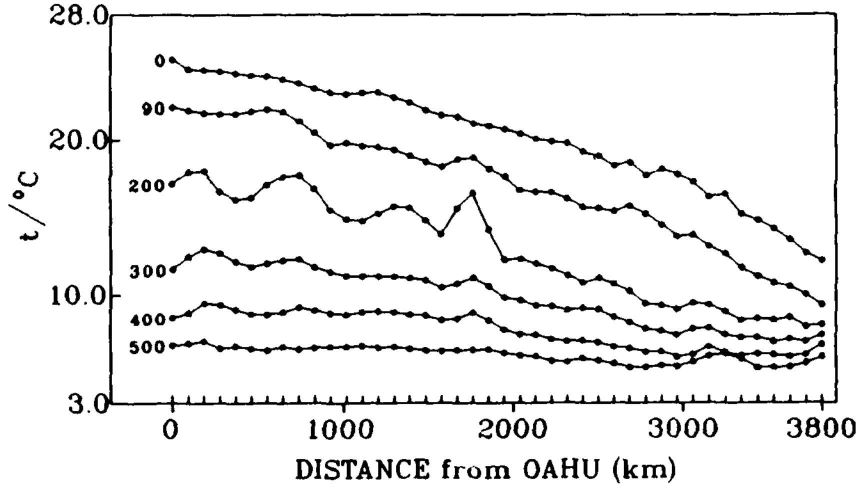
TEMPERATURE at various DEPTHS (meters)
MAY 1, 1973



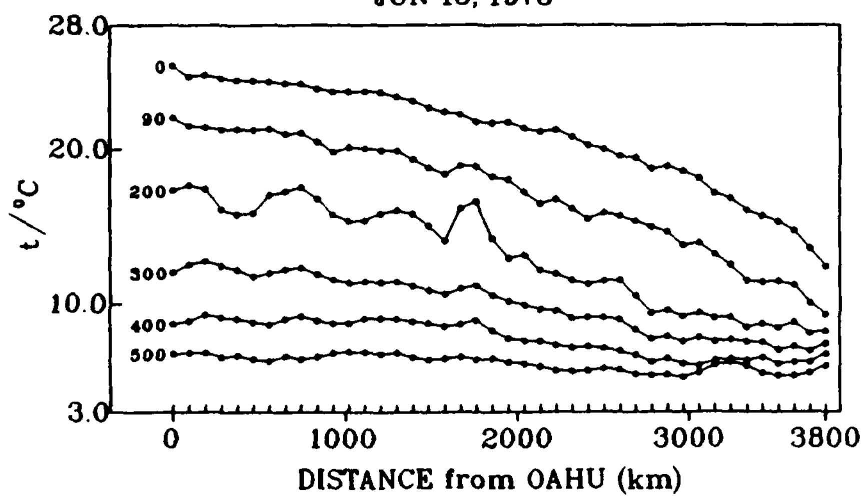
TEMPERATURE at various DEPTHS (meters)
MAY 15, 1973



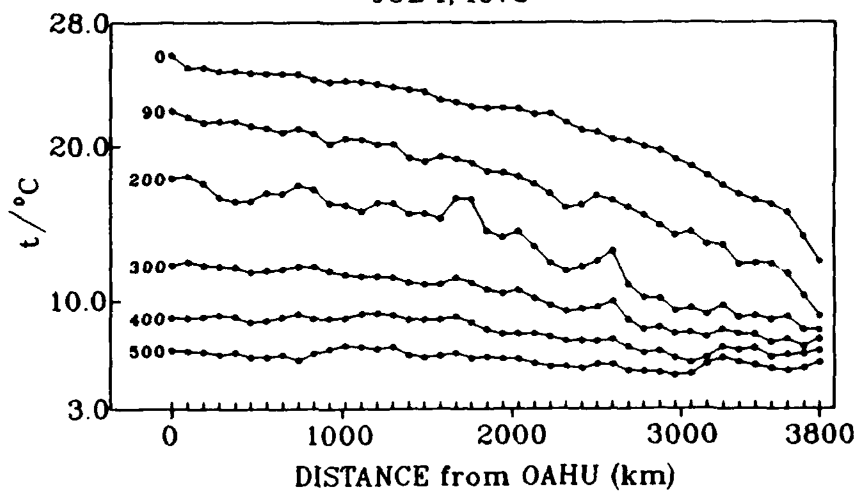
TEMPERATURE at various DEPTHS (meters)
JUN 1, 1973



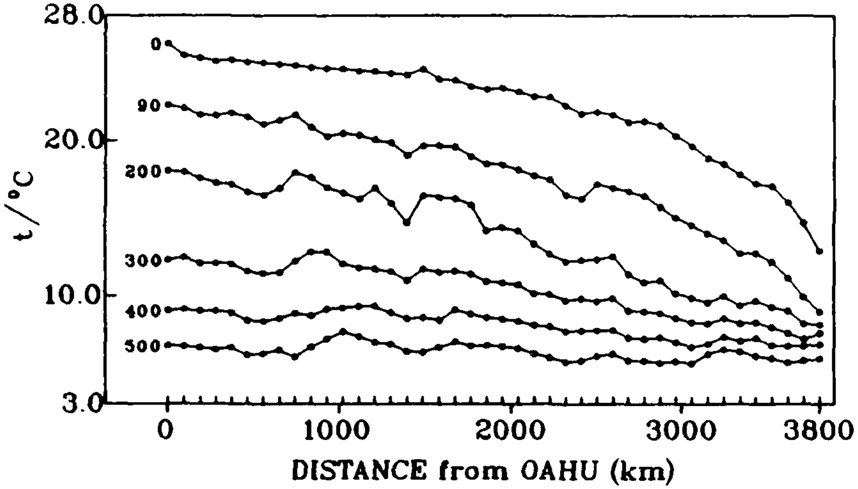
TEMPERATURE at various DEPTHS (meters)
JUN 15, 1973



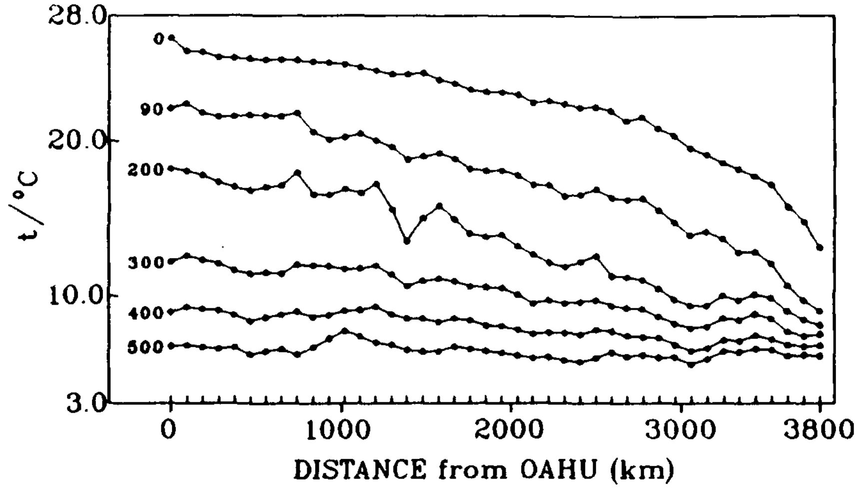
TEMPERATURE at various DEPTHS (meters)
JUL 1, 1973



TEMPERATURE at various DEPTHS (meters)
JUL 15, 1973



TEMPERATURE at various DEPTHS (meters)
AUG 1, 1973



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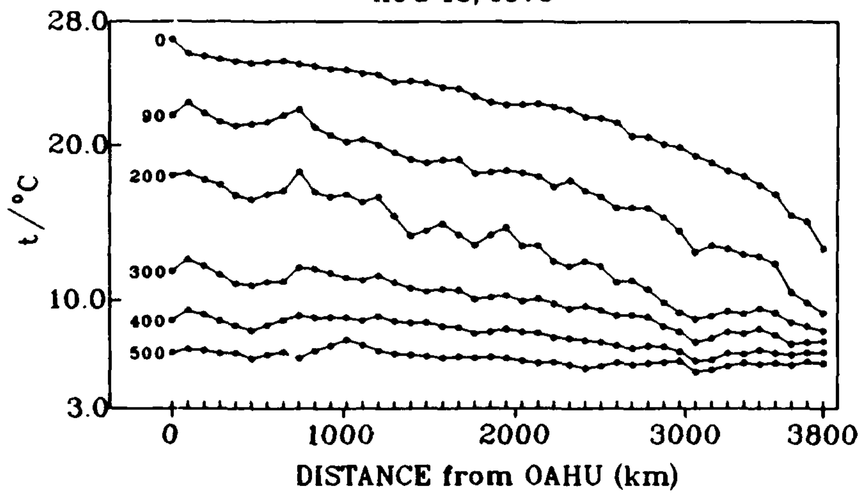
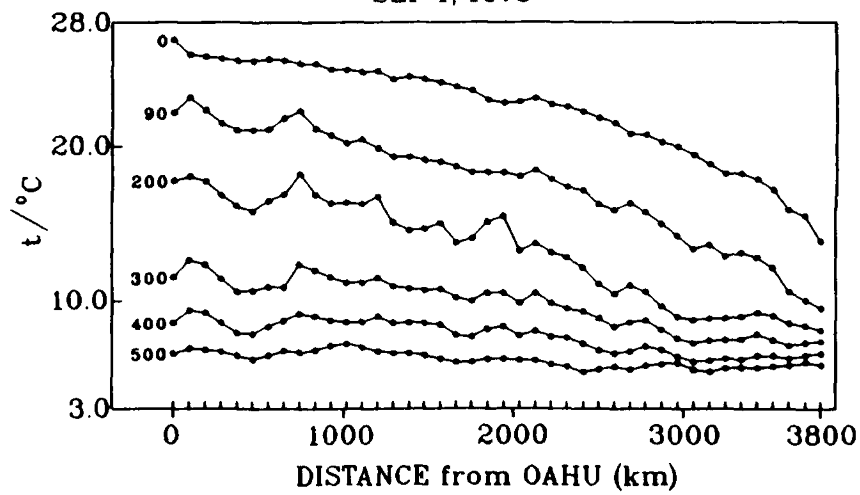
AUG 15, 1973



TEMPERATURE at various DEPTHS (meters)
SEP 1, 1973



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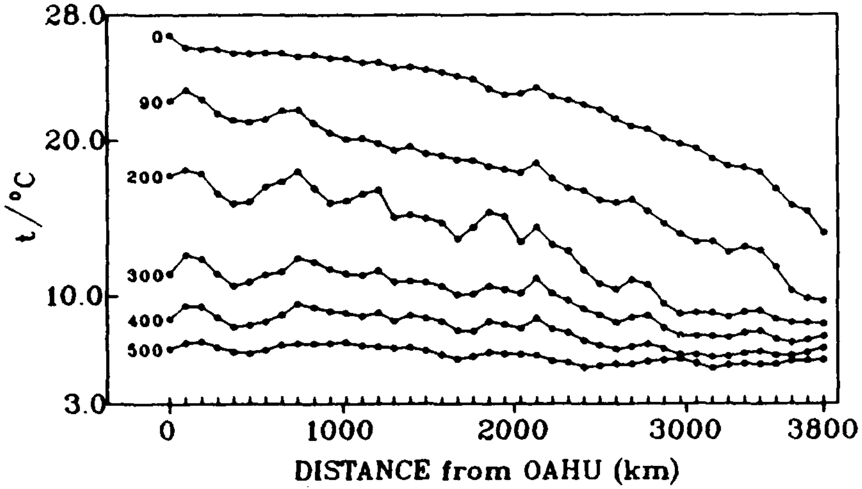
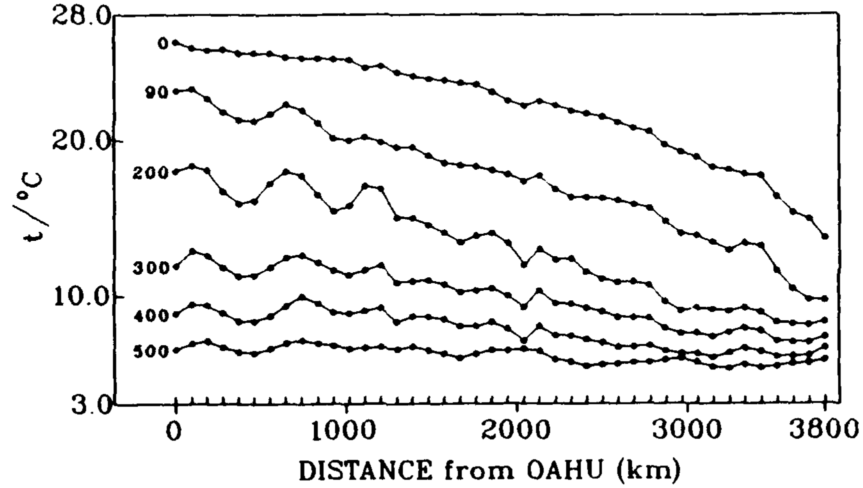
SEP 15, 1973



TEMPERATURE at various DEPTHS (meters)
OCT 1, 1973



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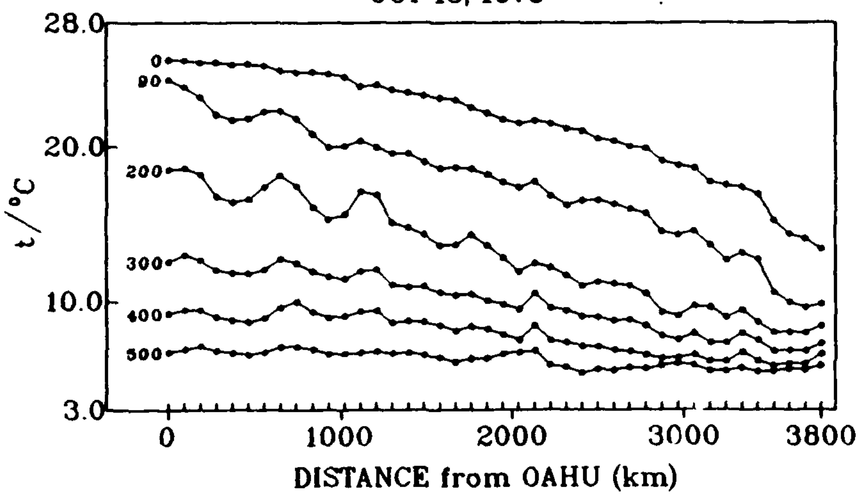
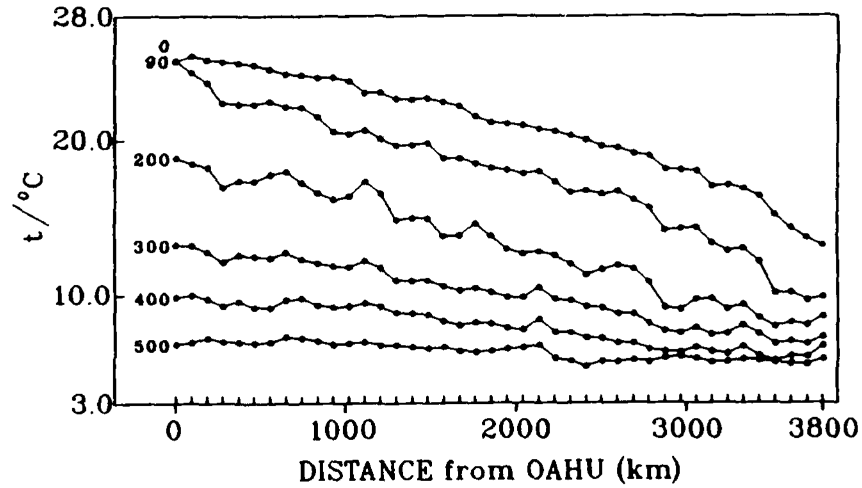
OCT 15, 1973



TEMPERATURE at various DEPTHS (meters)
NOV 1, 1973



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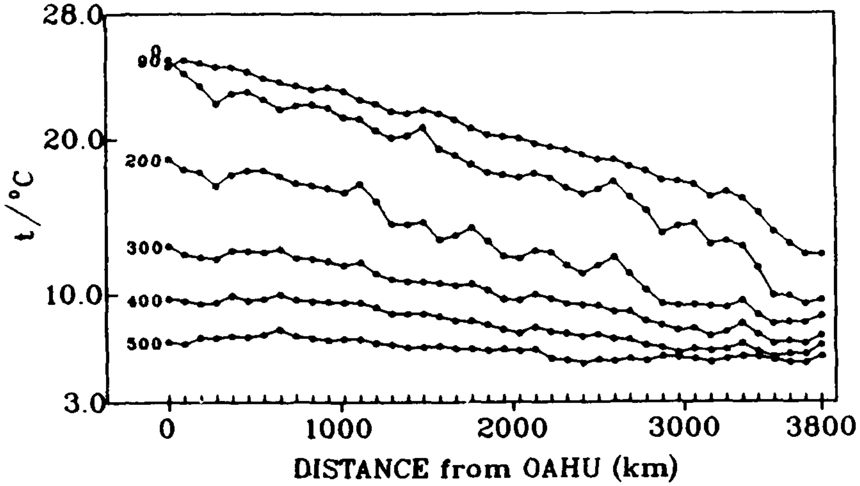
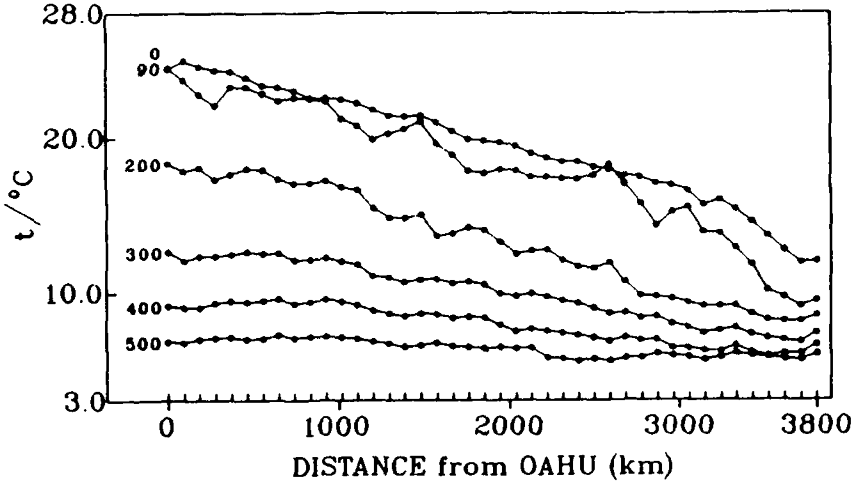


TEMPERATURE at various DEPTHS (meters)
DEC 1, 1973



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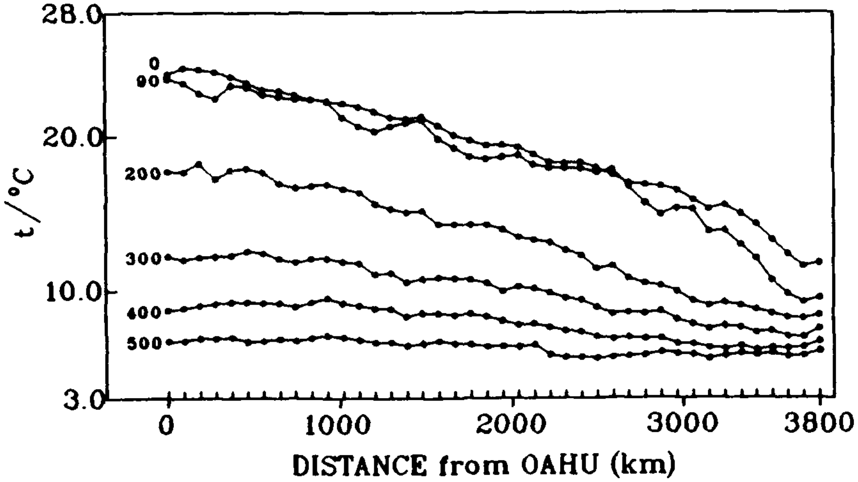
DEC 15, 1973



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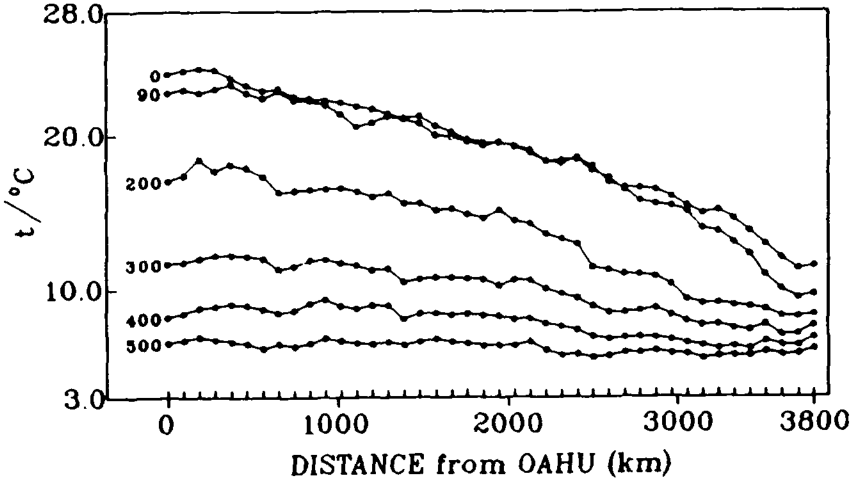
JAN 1, 1974



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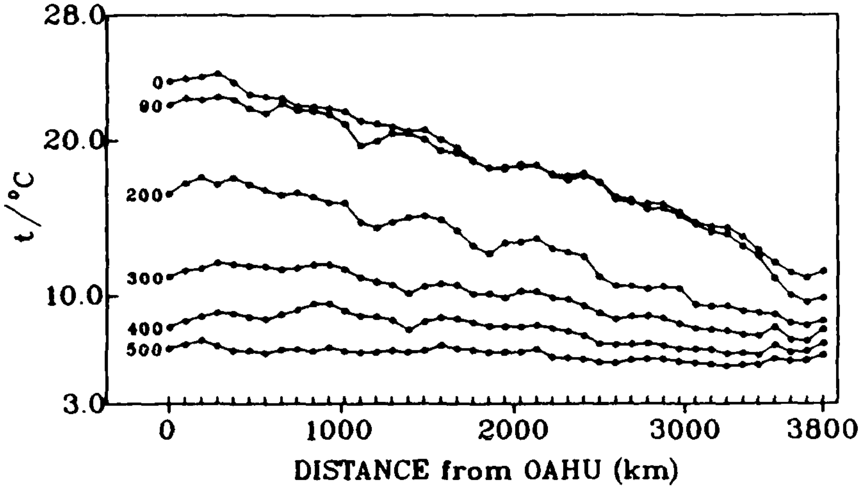

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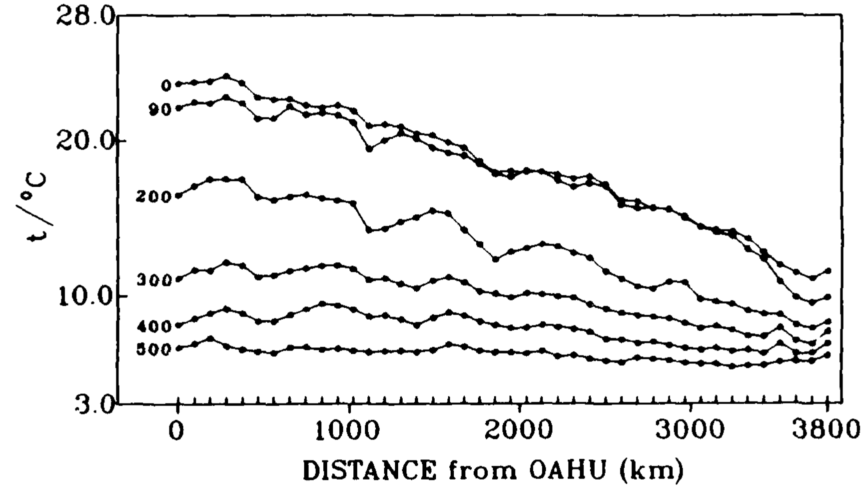

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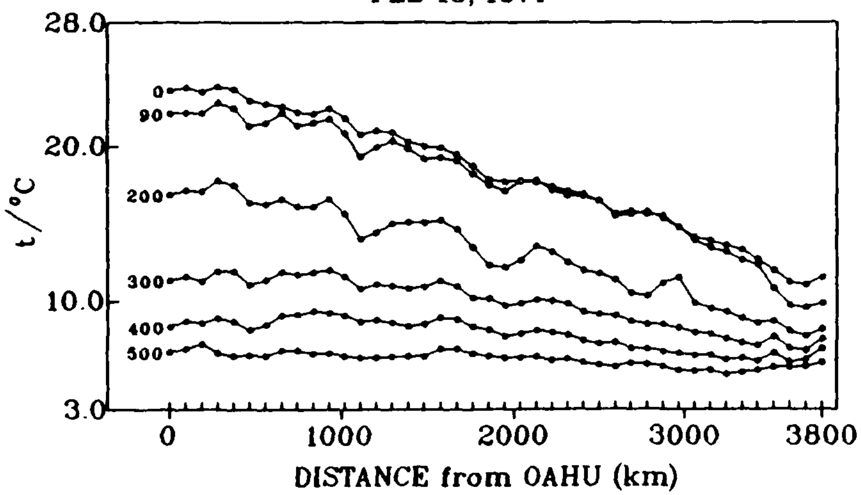
FEB 15, 1974



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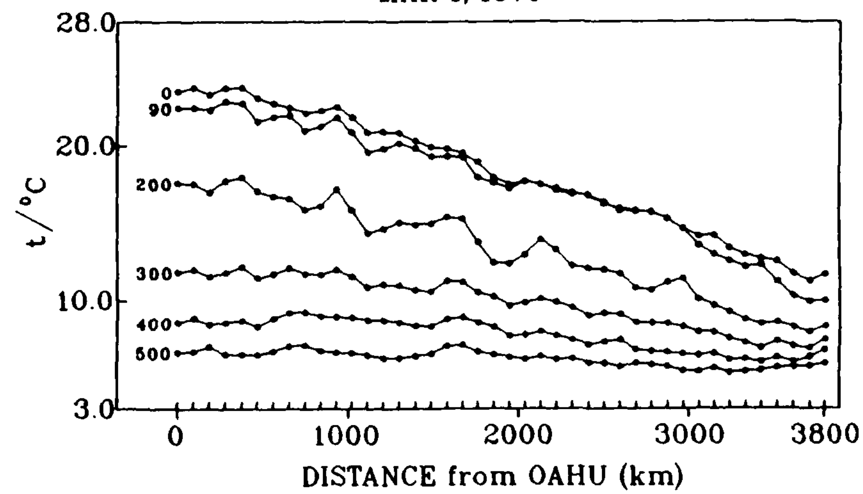
MAR 1, 1974



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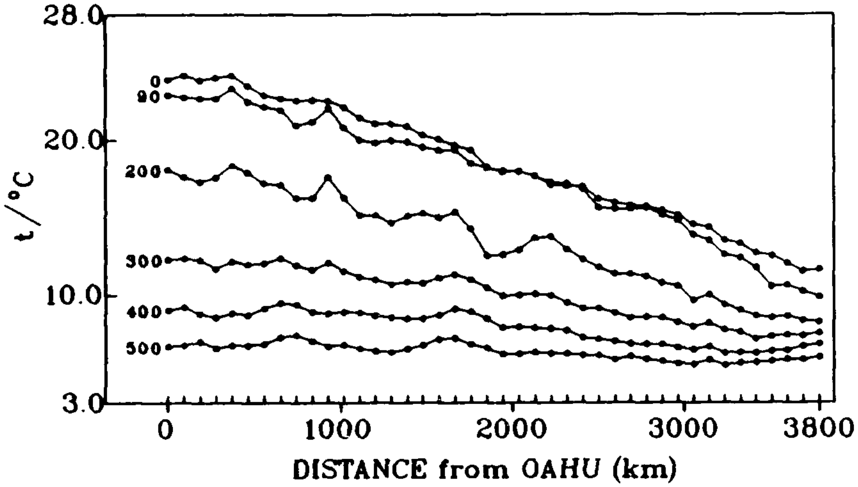
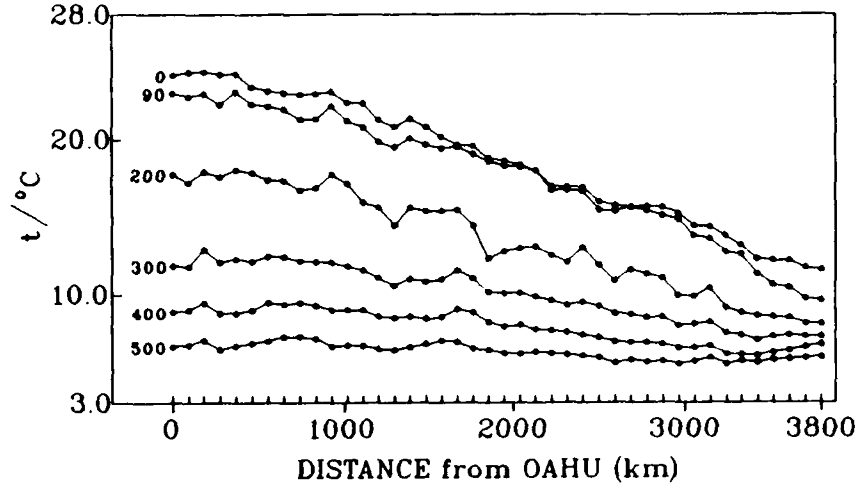
MAR 15, 1974



TEMPERATURE at various DEPTHS (meters)
APR 1, 1974



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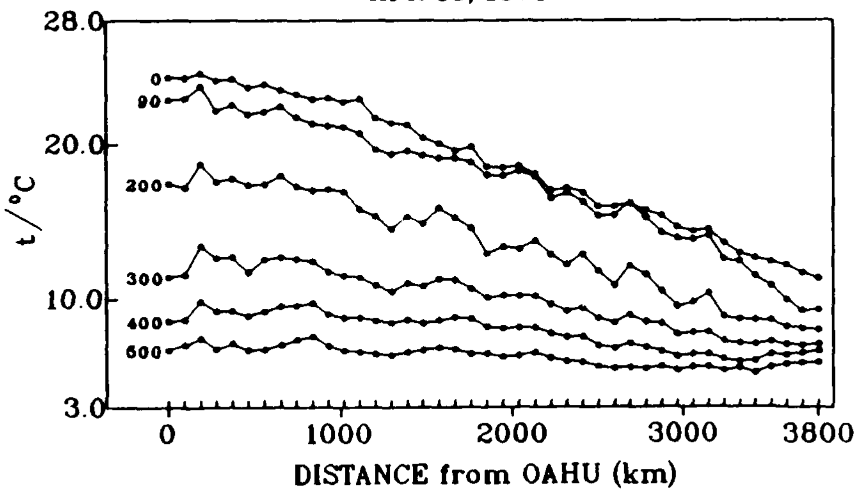

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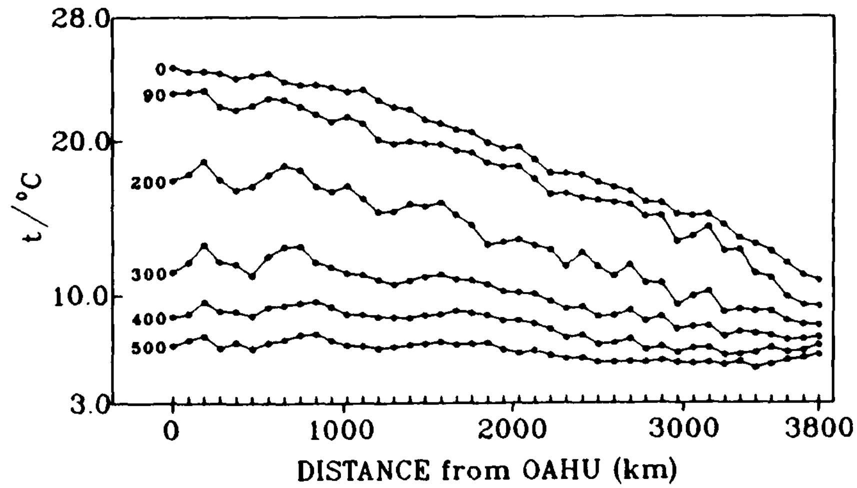
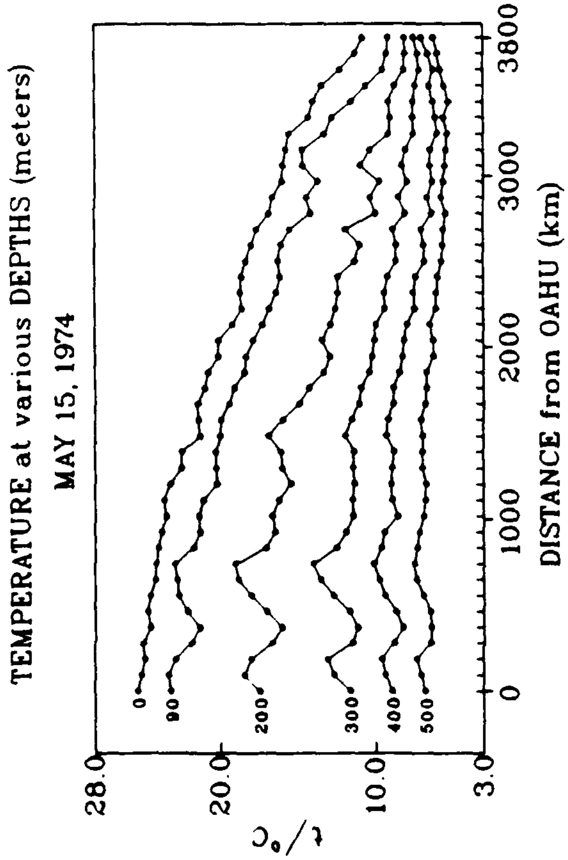
MAY 1, 1974




TEMPERATURE at various DEPTHS (meters)
MAY 15, 1974
t/°C
28.0
20.0
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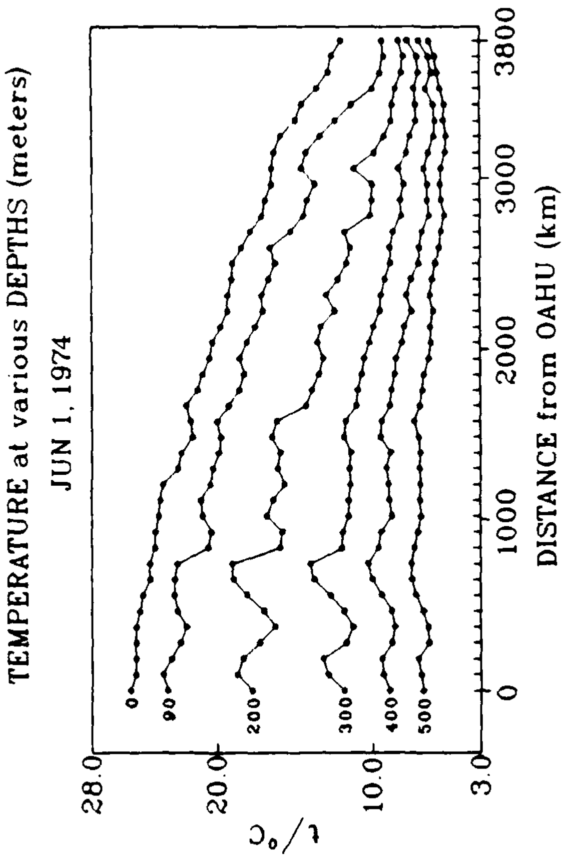
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
JUN 1, 1974
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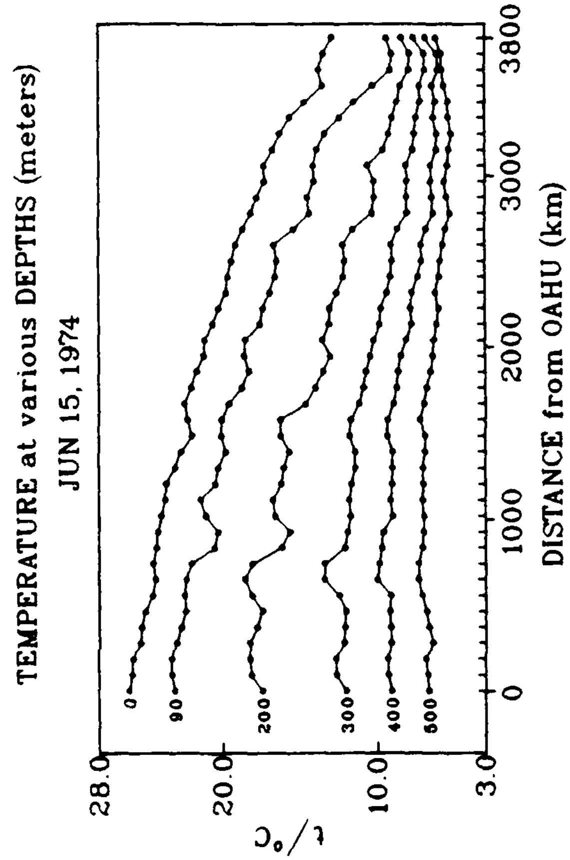
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
JUN 15, 1974
t/°C
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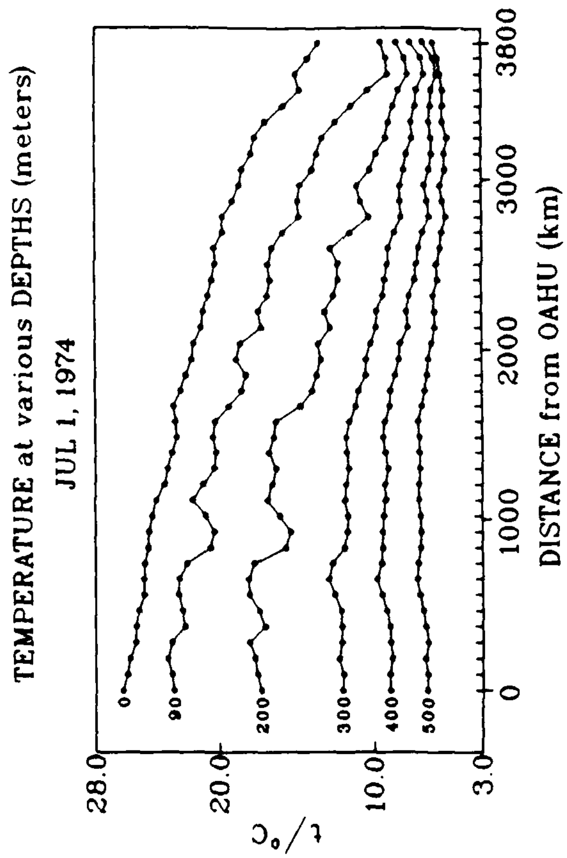
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
JUL 1, 1974
t/°C
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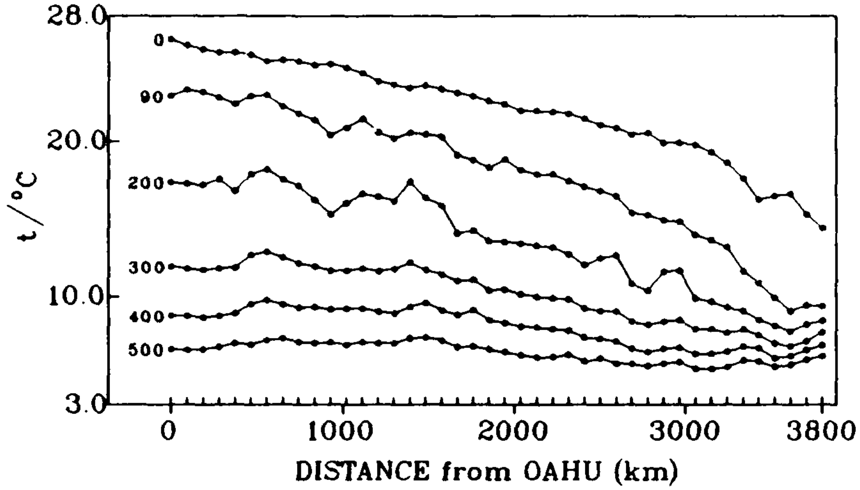
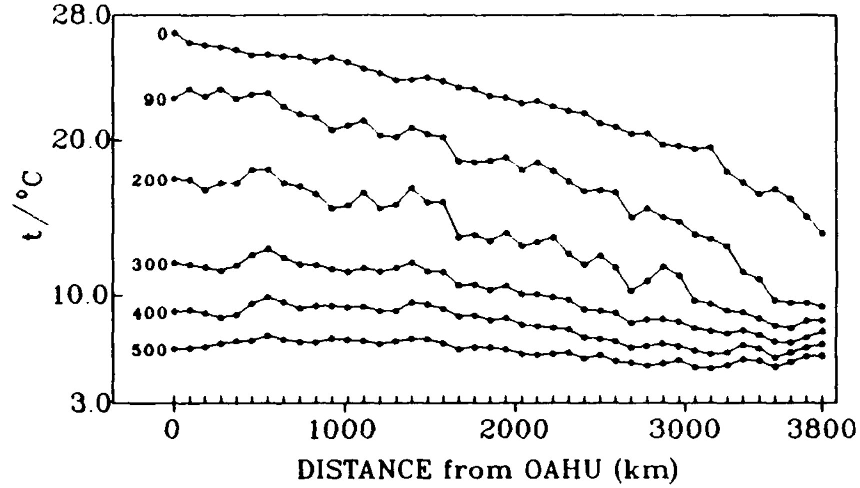
3800
DISTANCE from OAHU (km)

TEMPERATURE at various DEPTHS (meters)
JUL 15, 1974



TEMPERATURE at various DEPTHS (meters)
AUG 1, 1974



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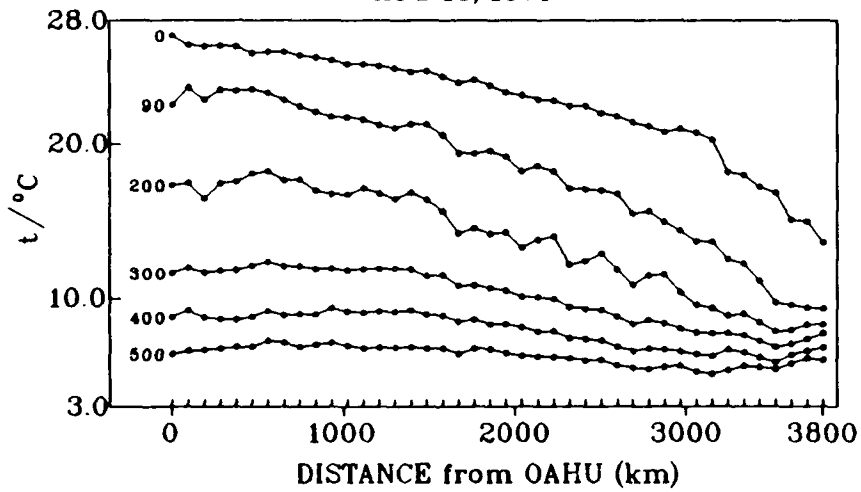
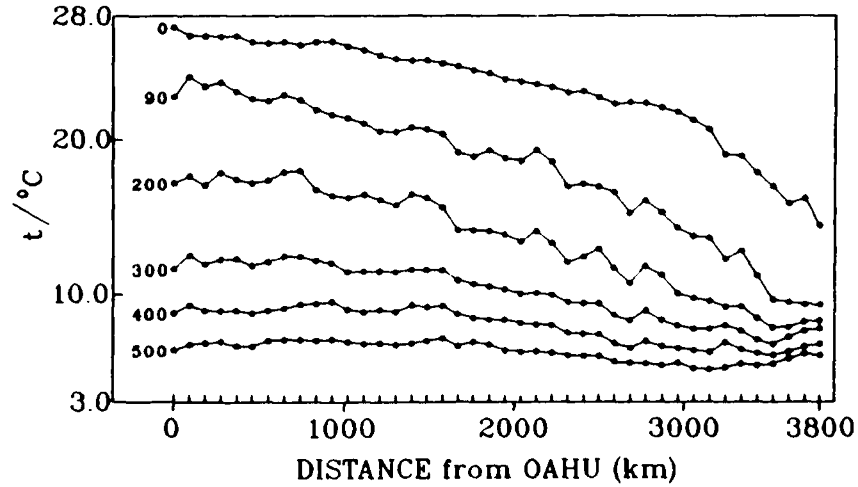
AUG 15, 1974



TEMPERATURE at various DEPTHS (meters)
SEP 1, 1974



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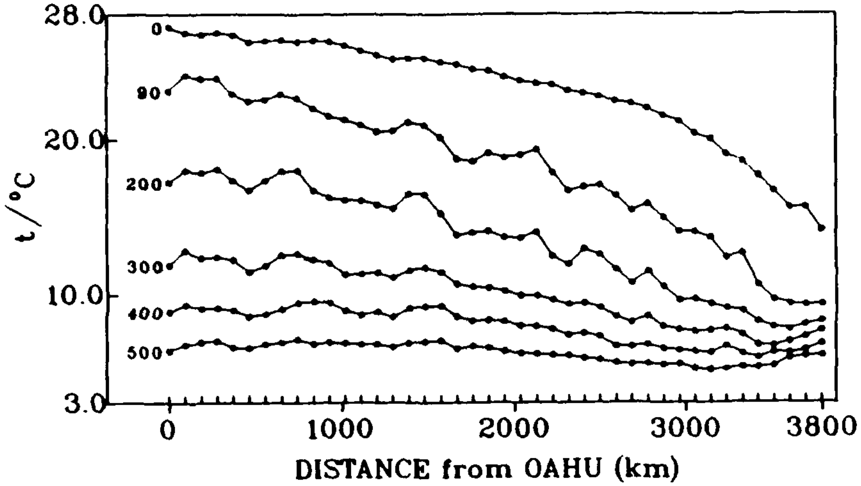
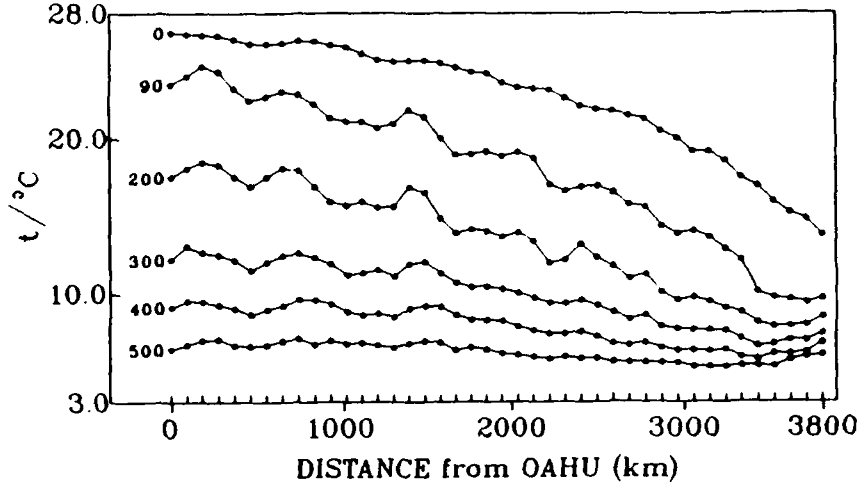


TEMPERATURE at various DEPTHS (meters)
OCT 1, 1974



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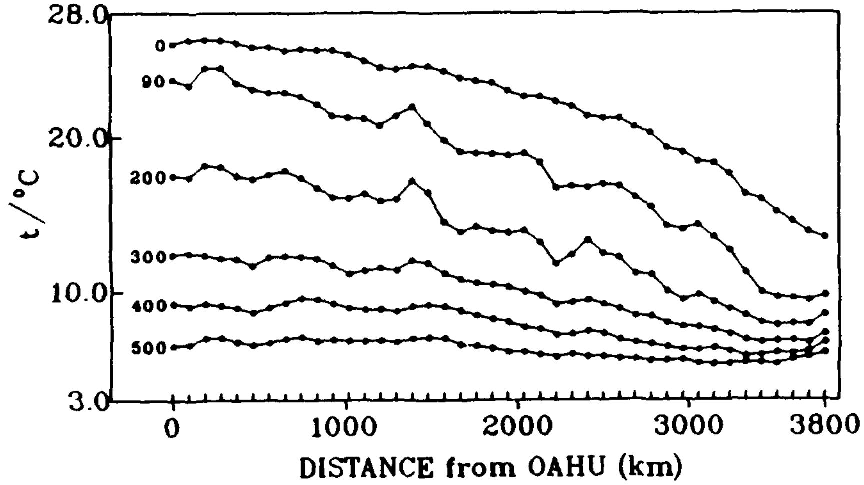

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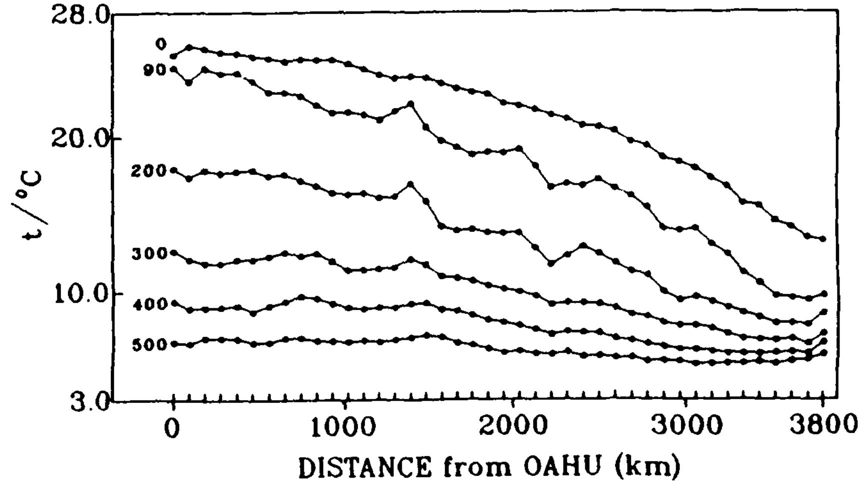
NOV 1, 1974



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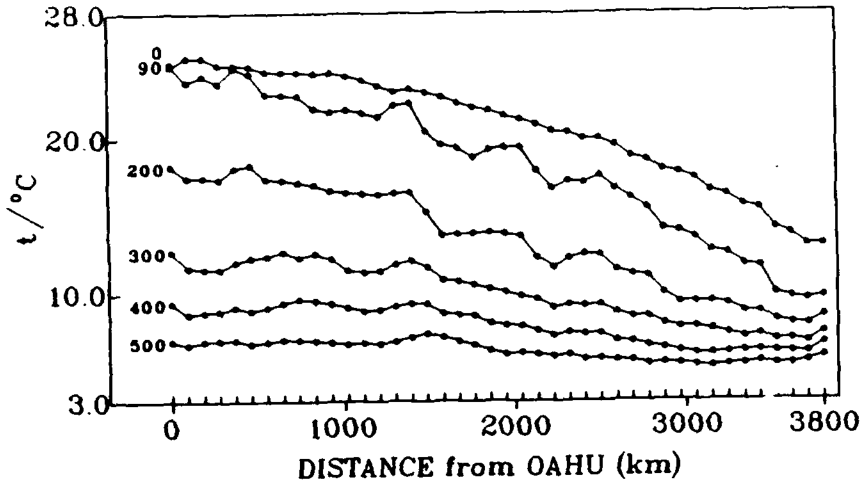
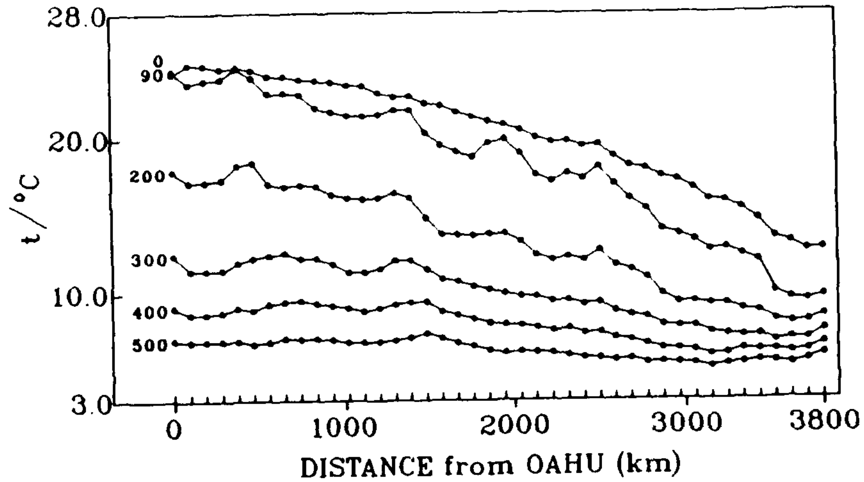


TEMPERATURE at various DEPTHS (meters)
DEC 1, 1974



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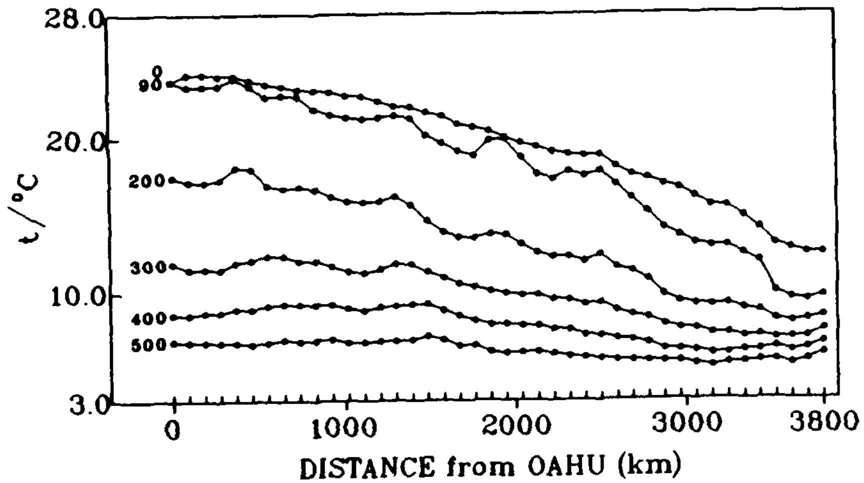

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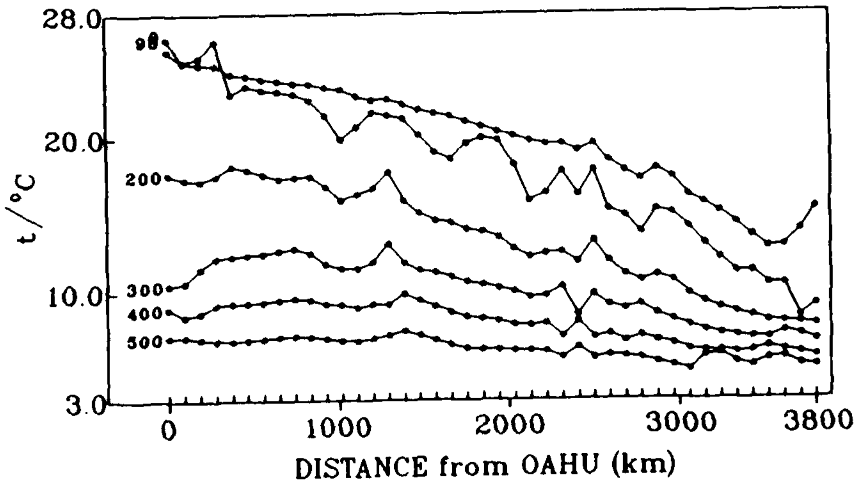
JAN 1, 1975



TEMPERATURE at various DEPTHS (meters)
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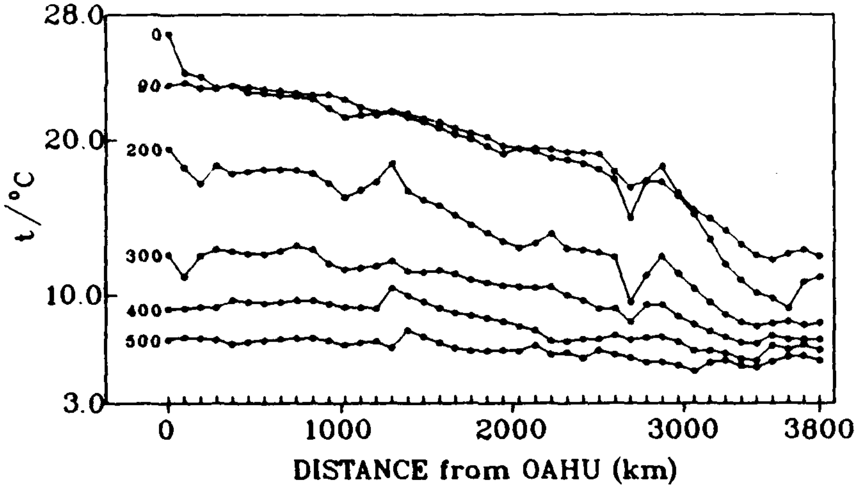

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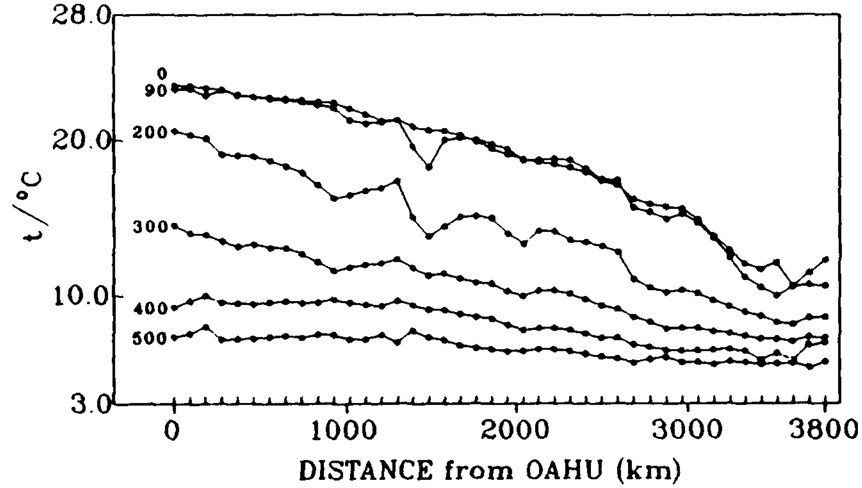
FEB 1, 1975



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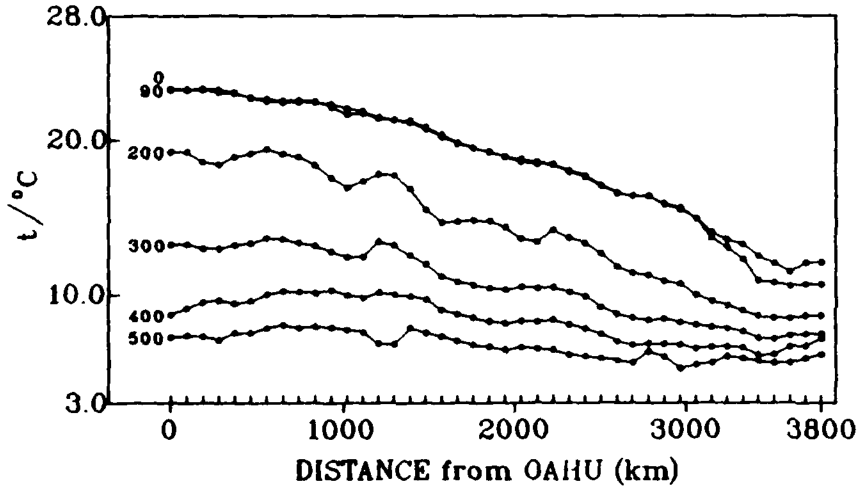

TEMPERATURE at various DEPTHS (meters)
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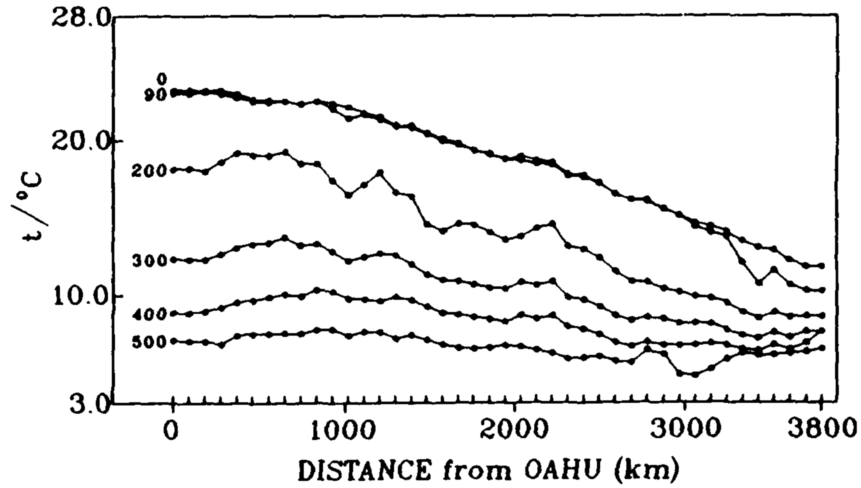

TEMPERATURE at vari‹ ›s DEPTHS (meters)
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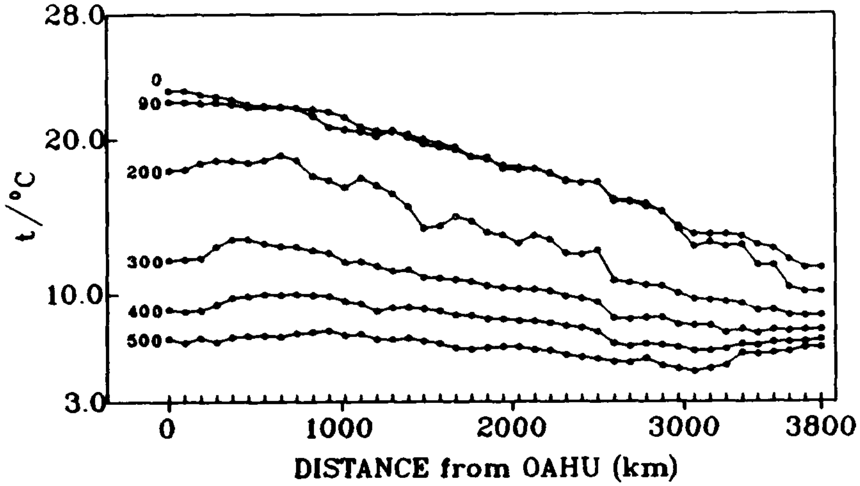

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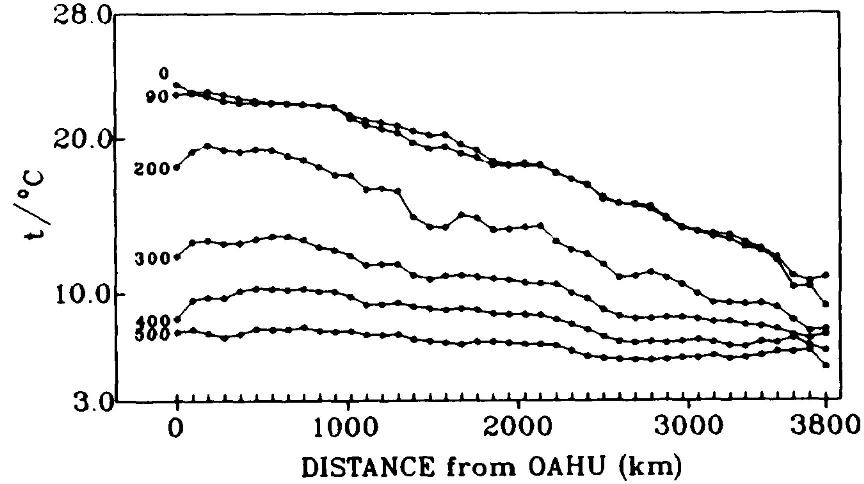

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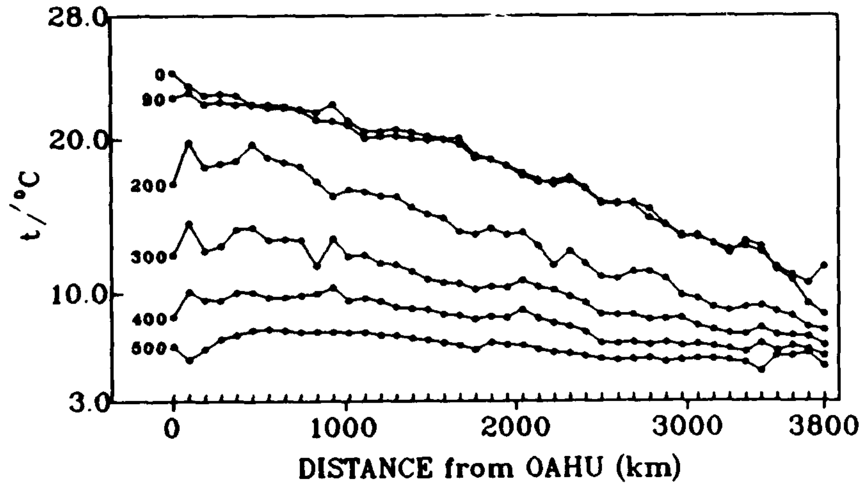

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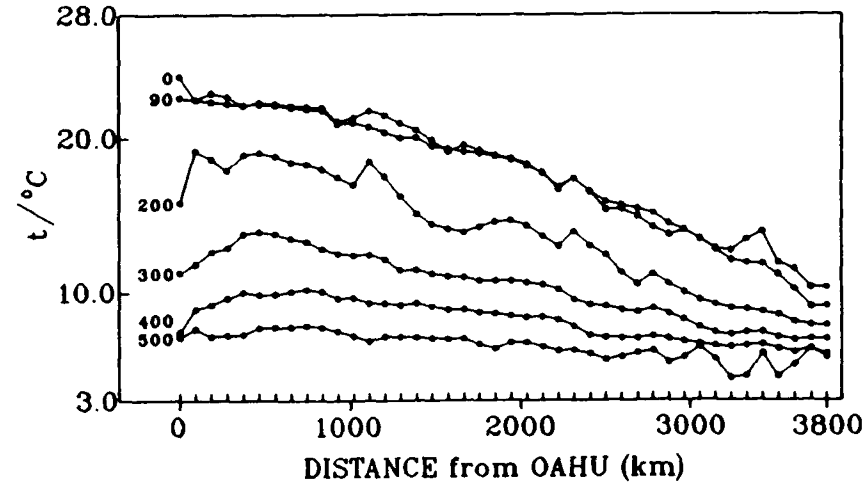

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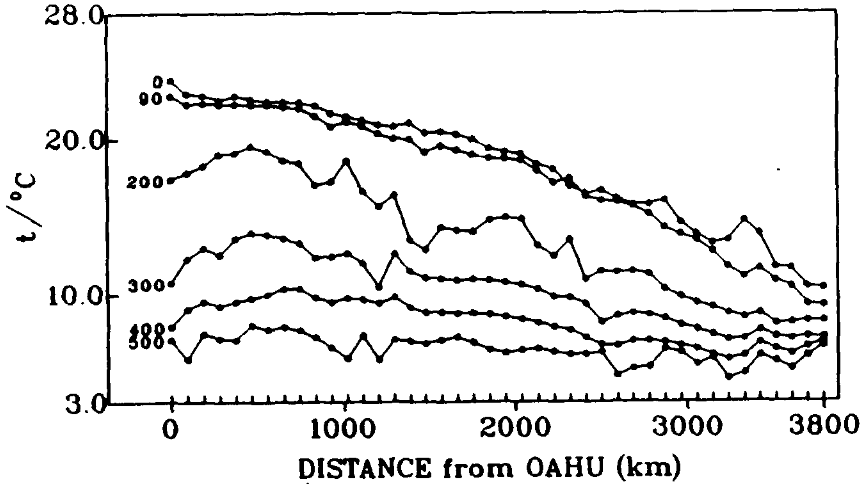

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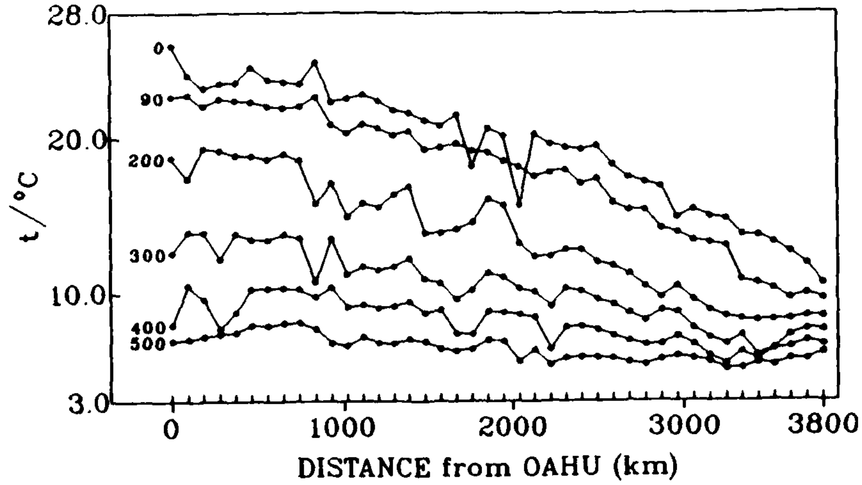

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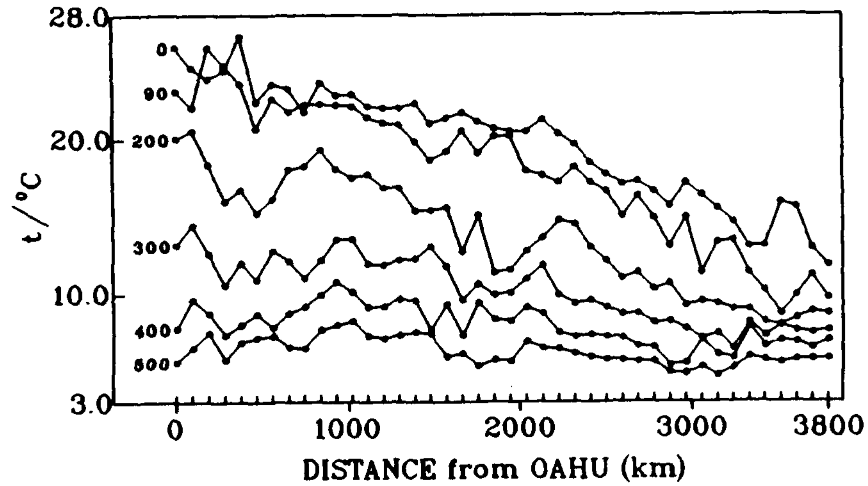

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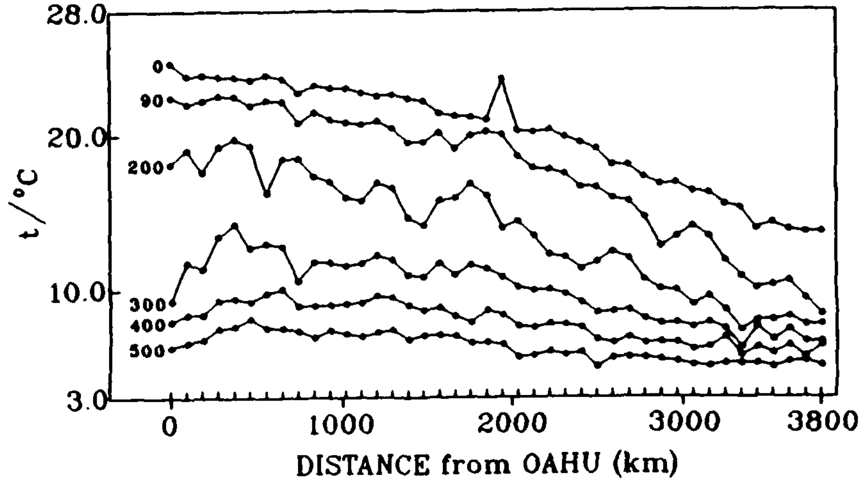

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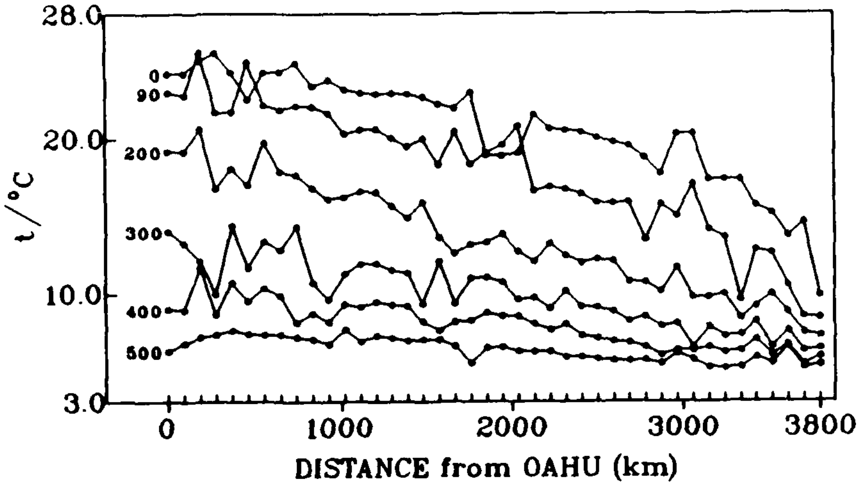

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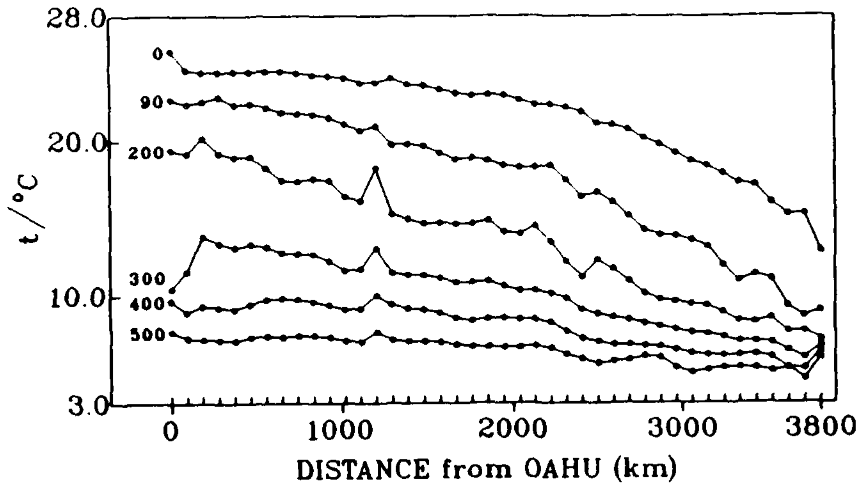

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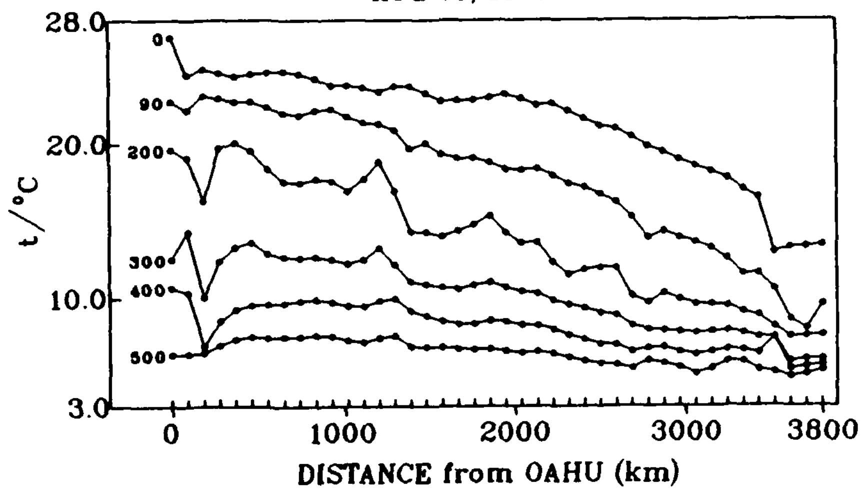

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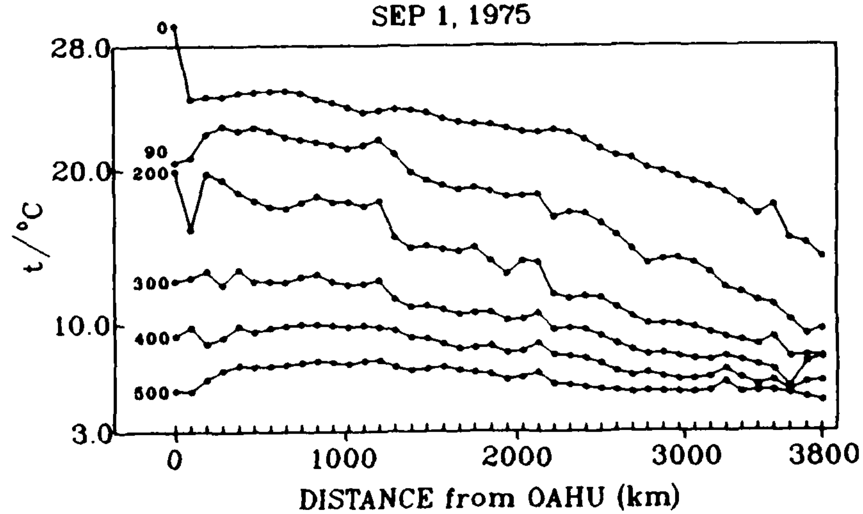
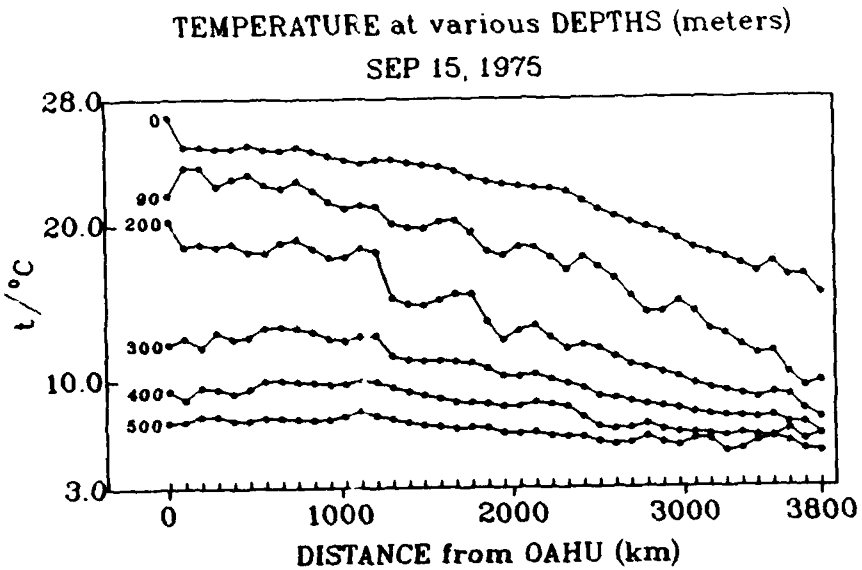
SEP 1, 1975





TEMPERATURE at various DEPTHS (meters)
SEP 15, 1975
t/°C
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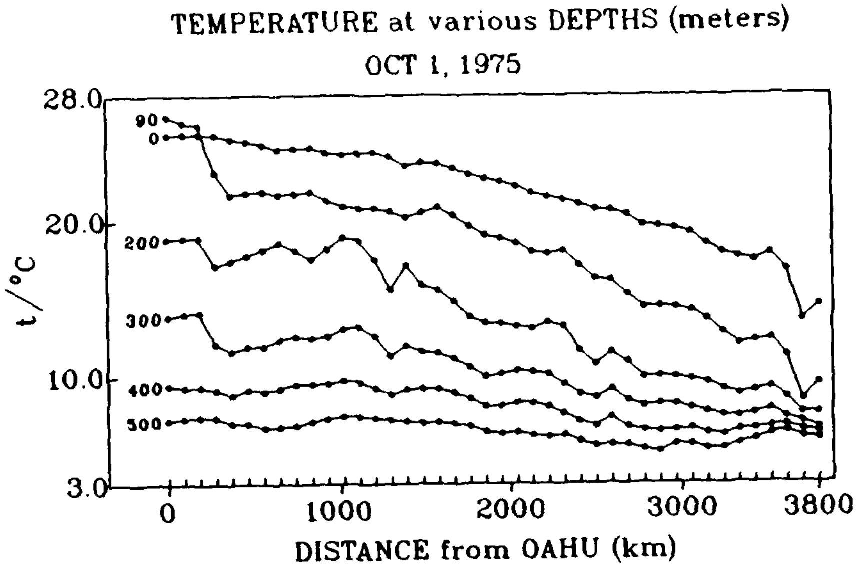
DISTANCE from OAHU (km)



TEMPERATURE at various DEPTHS (meters)
OCT 1, 1975
t/°C
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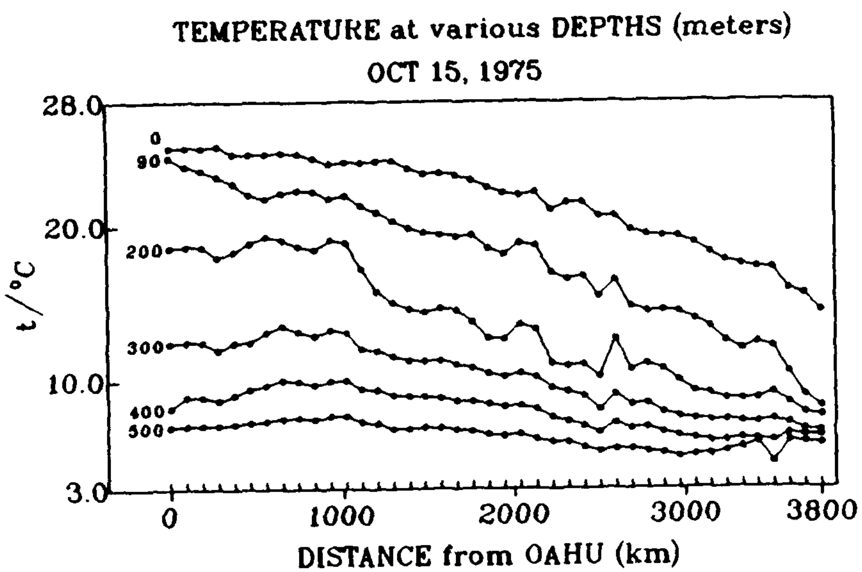

TEMPERATURE at various DEPTHS (meters)
OCT 15, 1975
t/°C
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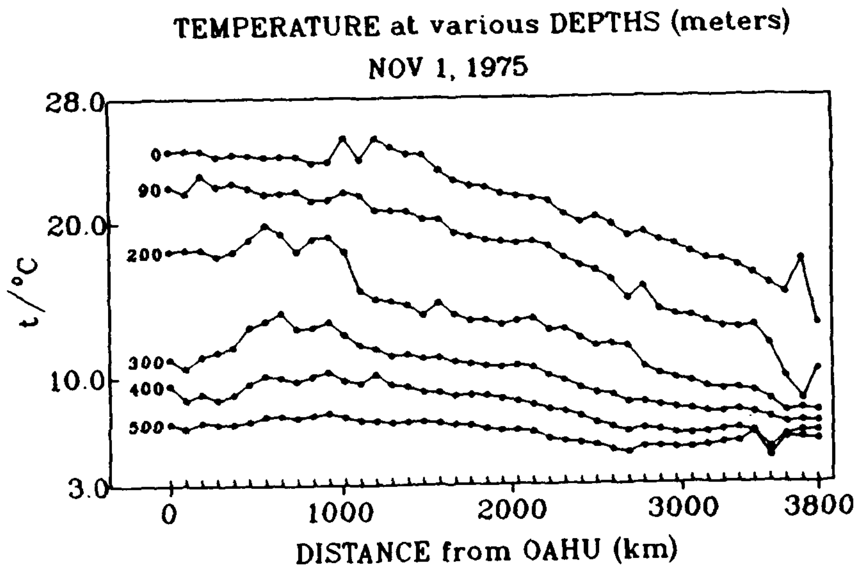

TEMPERATURE at various DEPTHS (meters)
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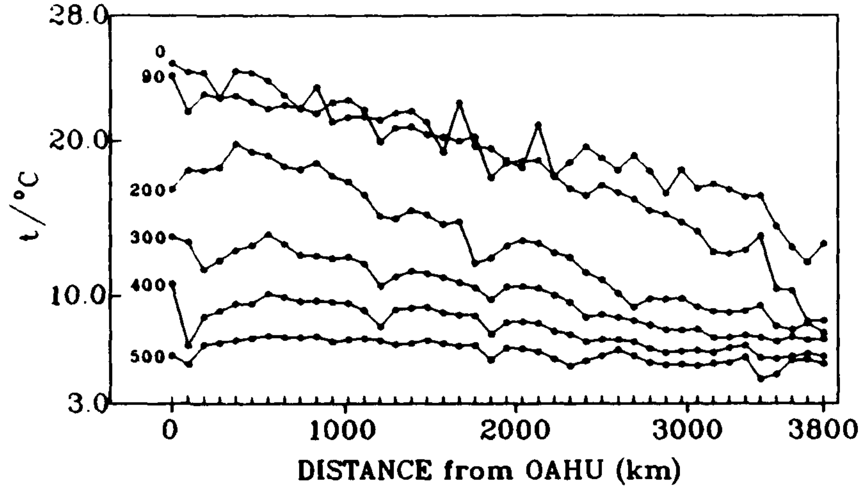
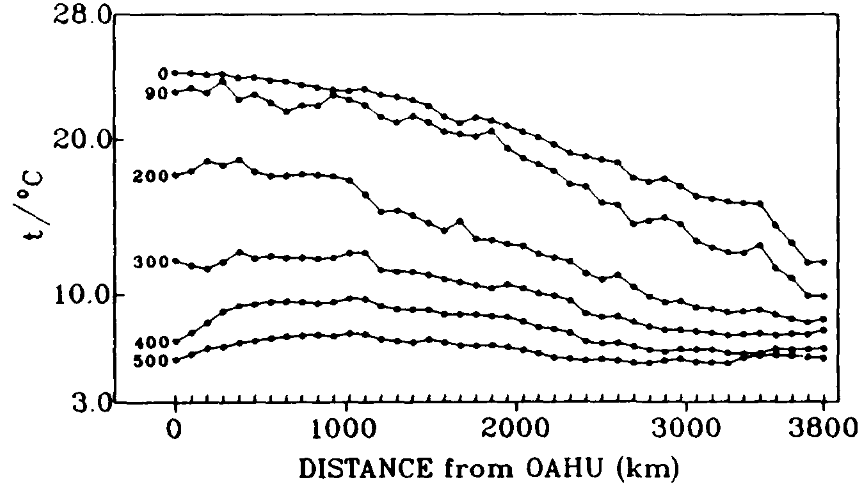
3800
DISTANCE from OAHU (km)

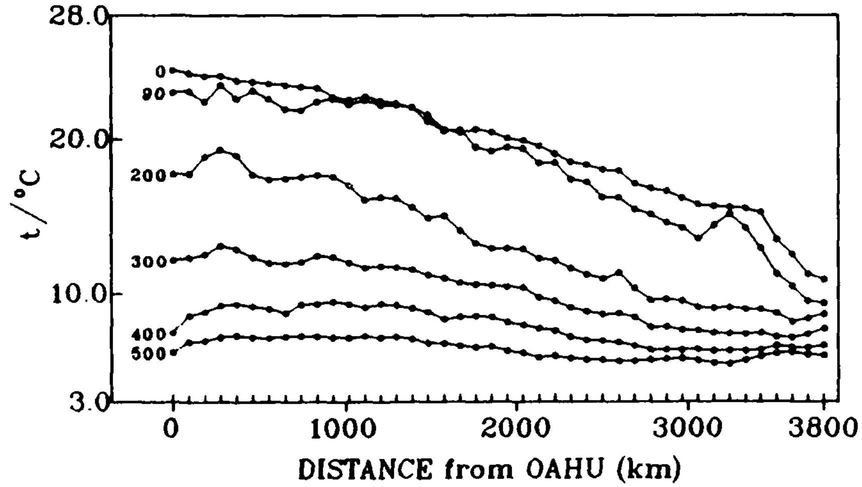
TEMPERATURE at various DEPTHS (meters)
NOV 15, 1975



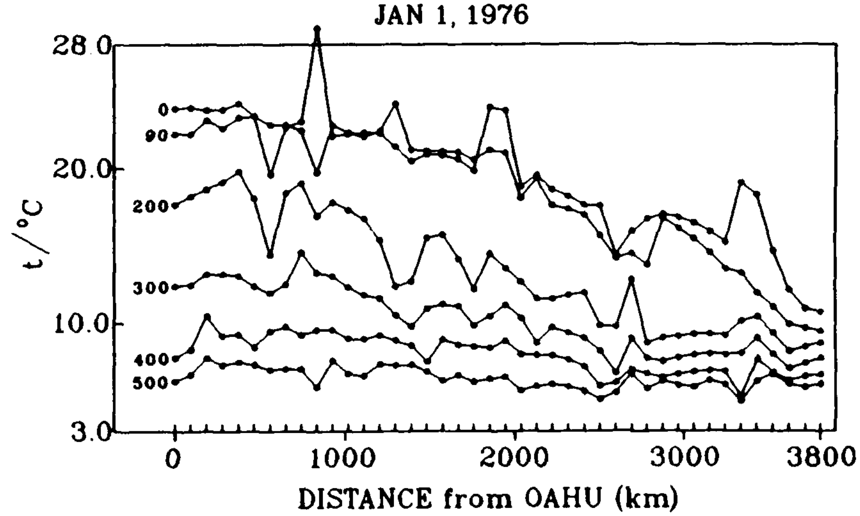
TEMPERATURE at various DEPTHS (meters)
DEC 1, 1975



TEMPERATURE at various DEPTHS (meters)
DEC 15, 1975



TEMPERATURE at various DEPTHS (meters)
JAN 1, 1976



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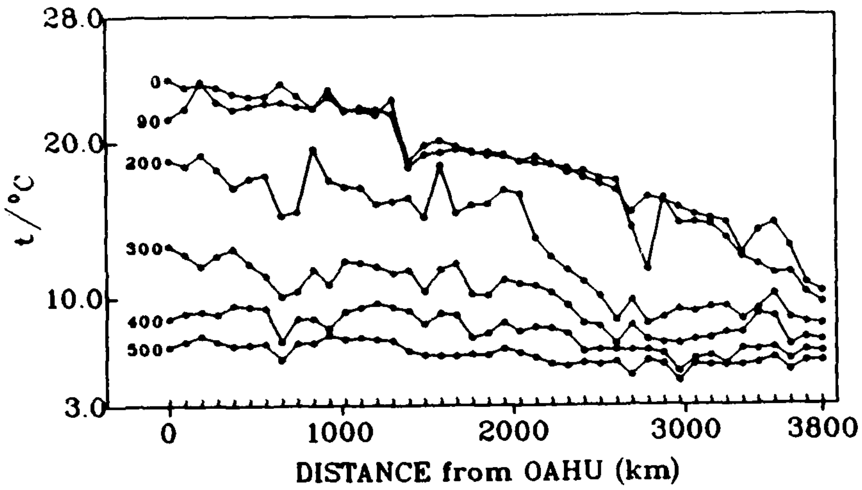
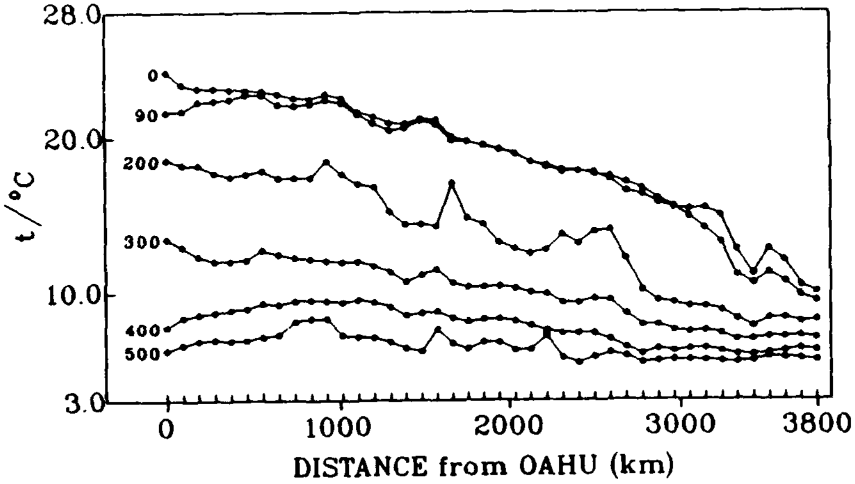
JAN 15, 1976



TEMPERATURE at various DEPTHS (meters)
FEB 1, 1976



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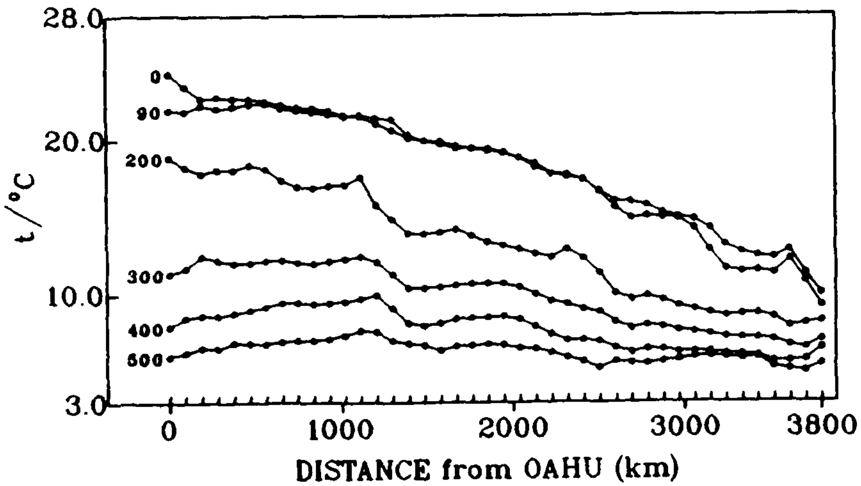
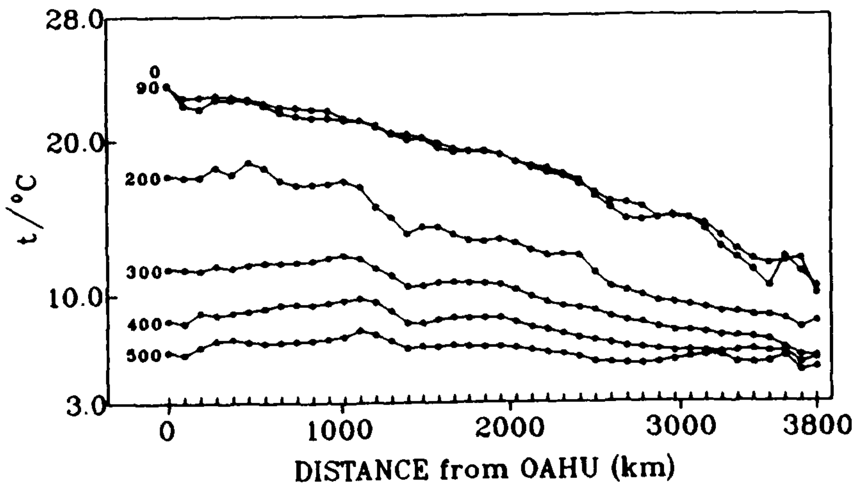
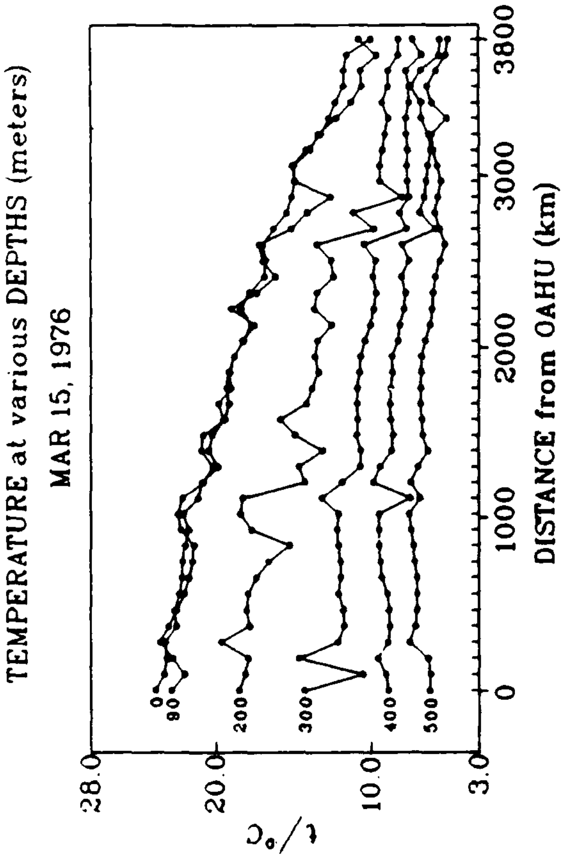
FEB 15, 1976



TEMPERATURE at various DEPTHS (meters)
MAR 1, 1976




TEMPERATURE at various DEPTHS (meters)
MAR 15, 1976
t/°C
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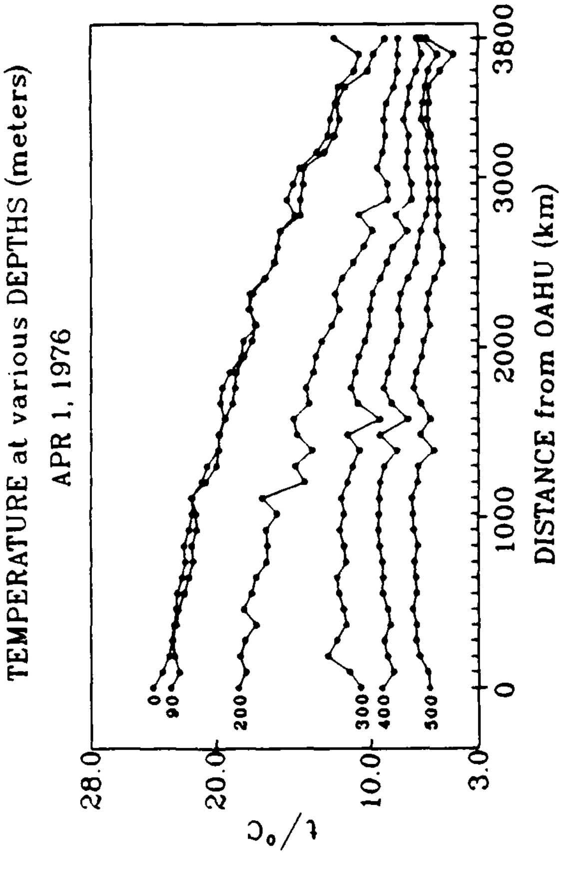
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
APR 1, 1976
t/°C
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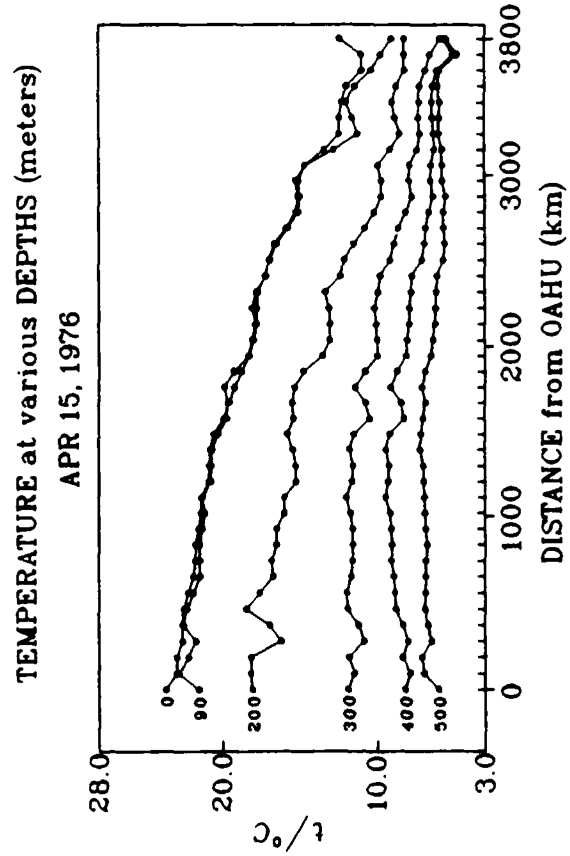
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
APR 15, 1976
t/°C
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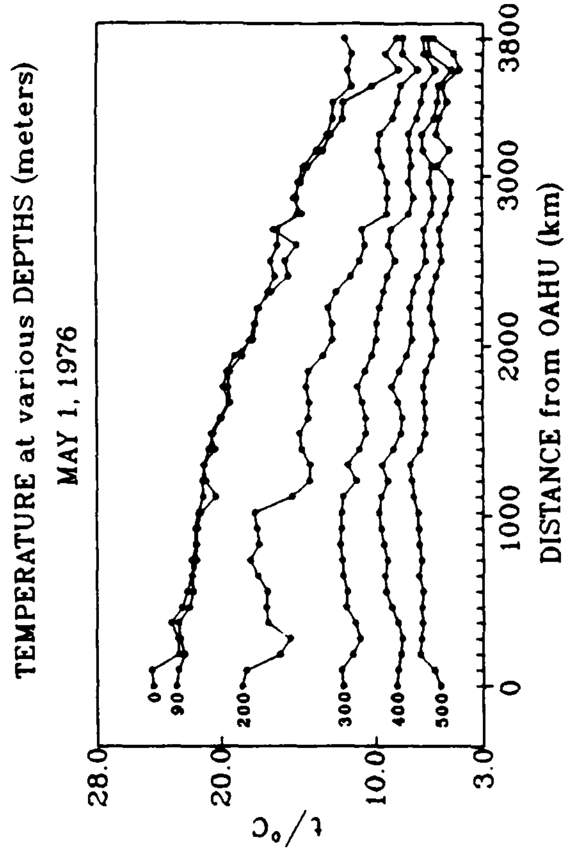
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
MAY 1, 1976
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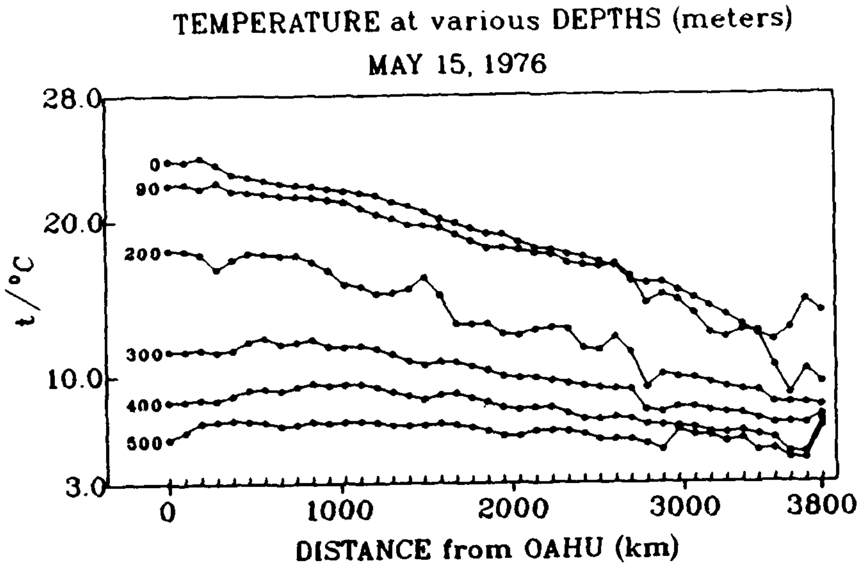
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
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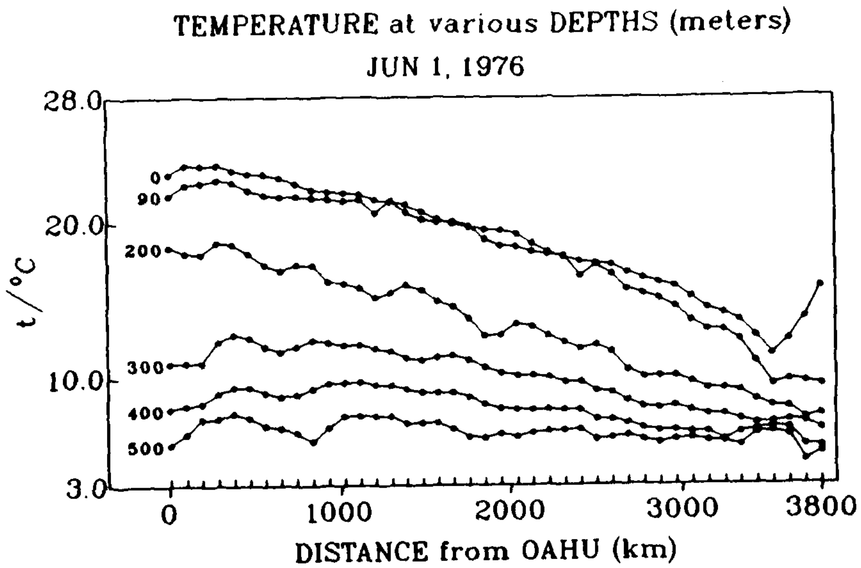
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
JUN 1, 1976
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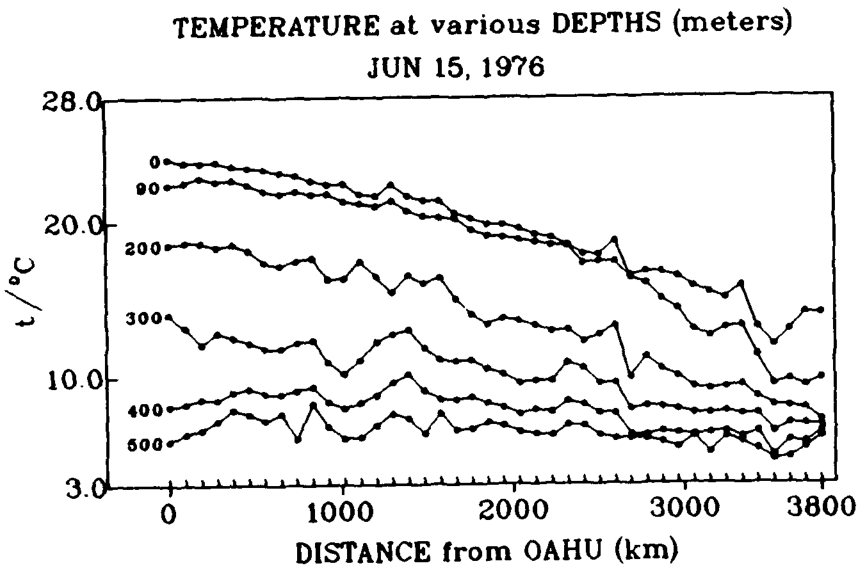
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
JUN 15, 1976
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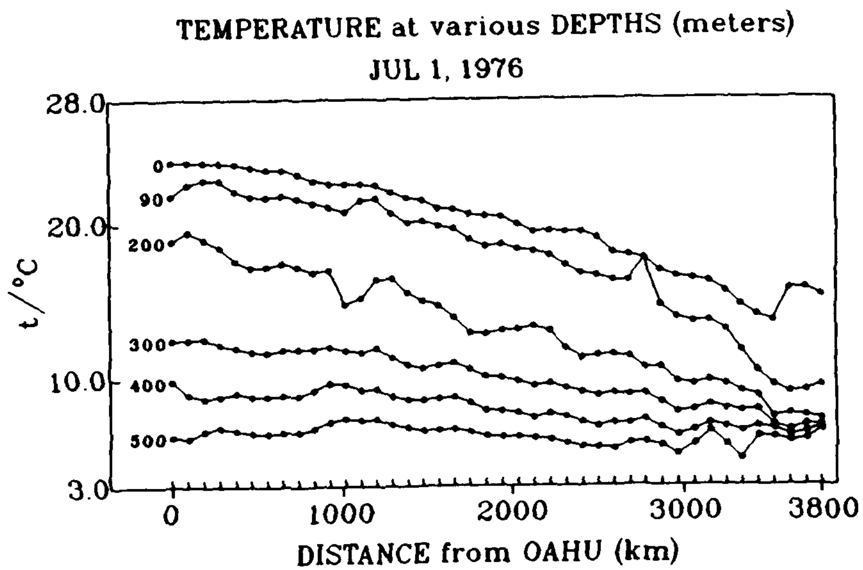
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
JUL 1, 1976
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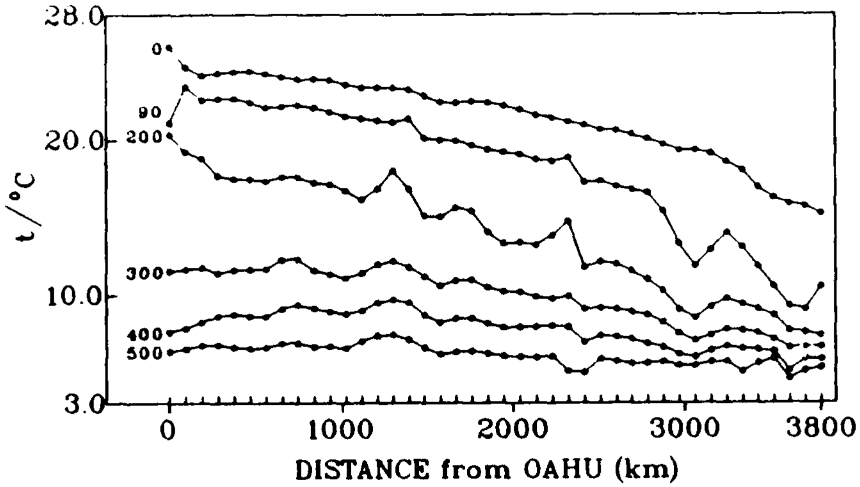
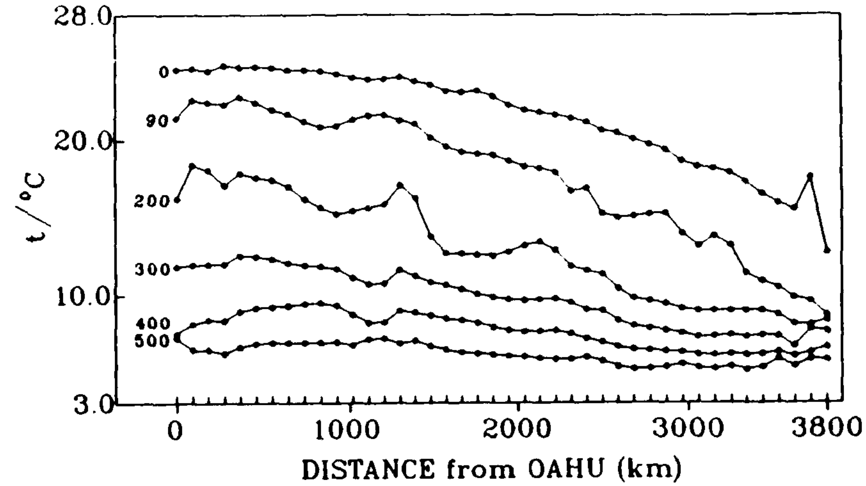
DISTANCE from OAHU (km)

TEMPERATURE at various DEPTHS (meters)
JUL 15, 1976



TEMPERATURE at various DEPTHS (meters)
AUG 1, 1976



TEMPERATURE at various DEPTHS (meters)
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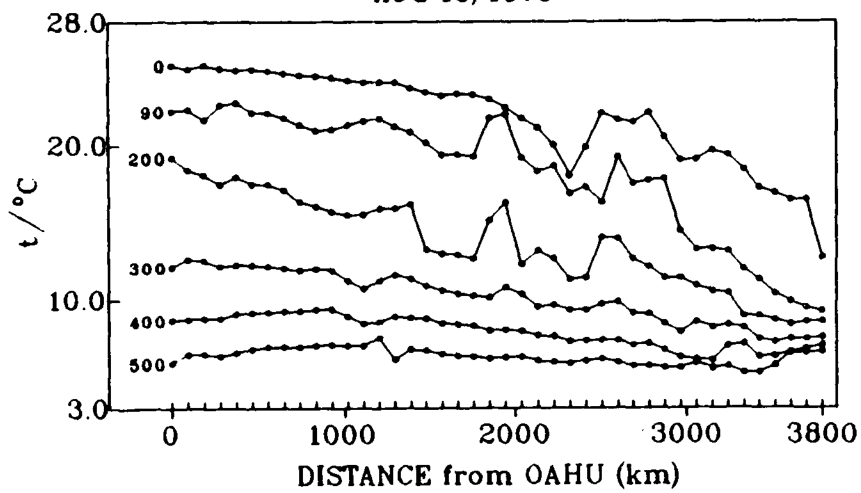

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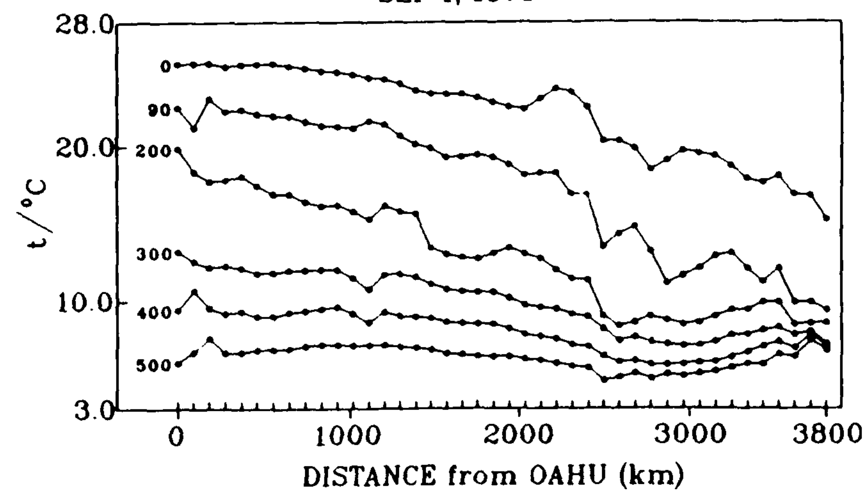

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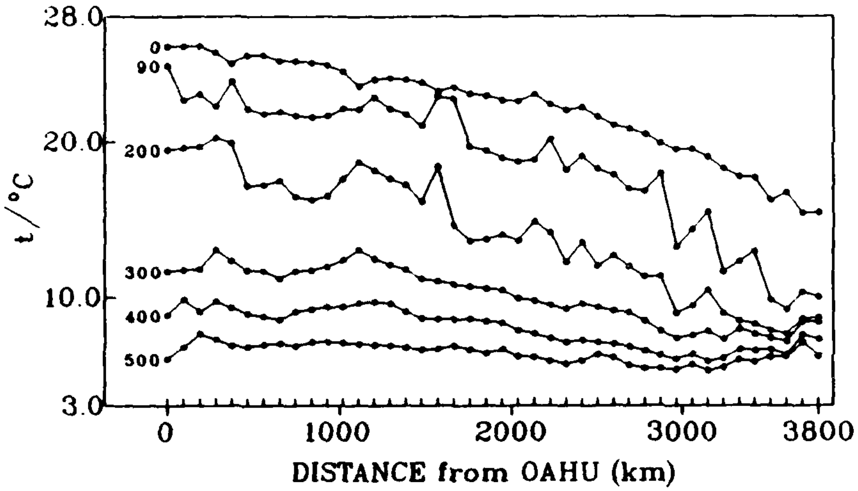
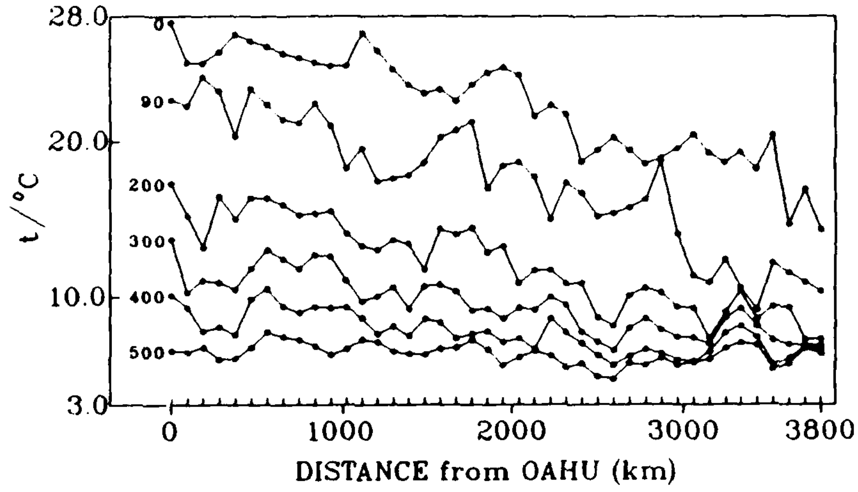
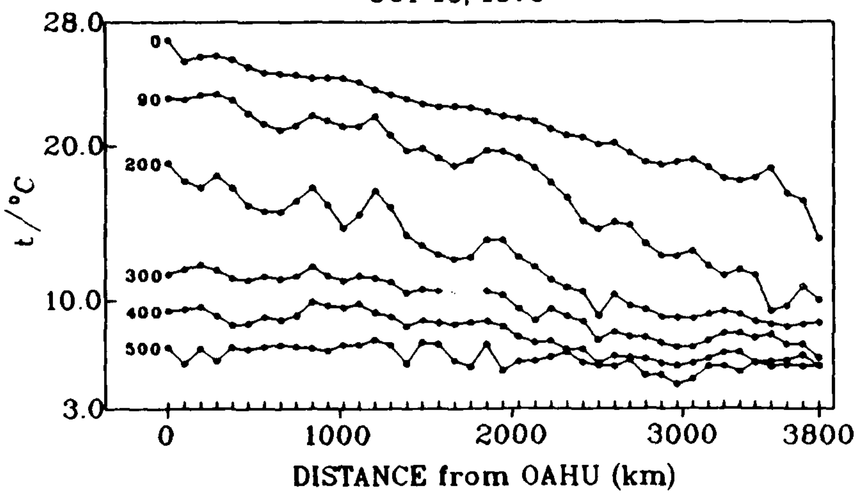
SEP 15, 1976



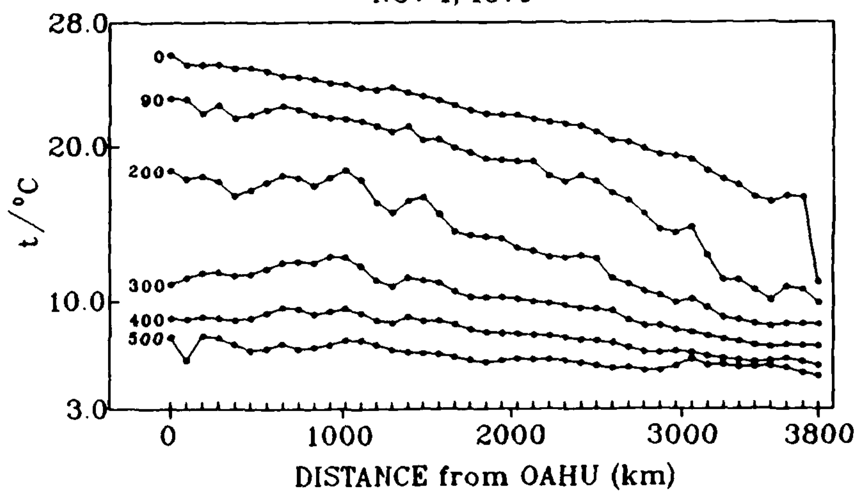
TEMPERATURE at various DEPTHS (meters)
OCT 1, 1976



TEMPERATURE at various DEPTHS (meters)
OCT 15, 1976



TEMPERATURE at various DEPTHS (meters)
NOV 1, 1976



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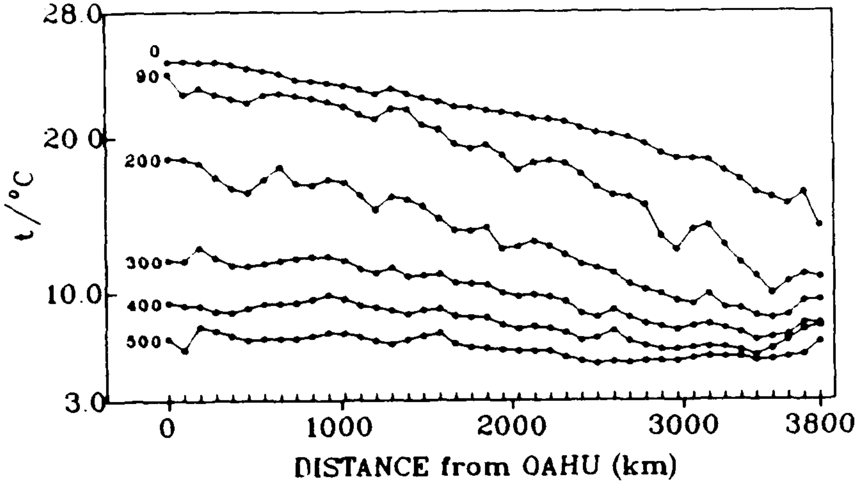

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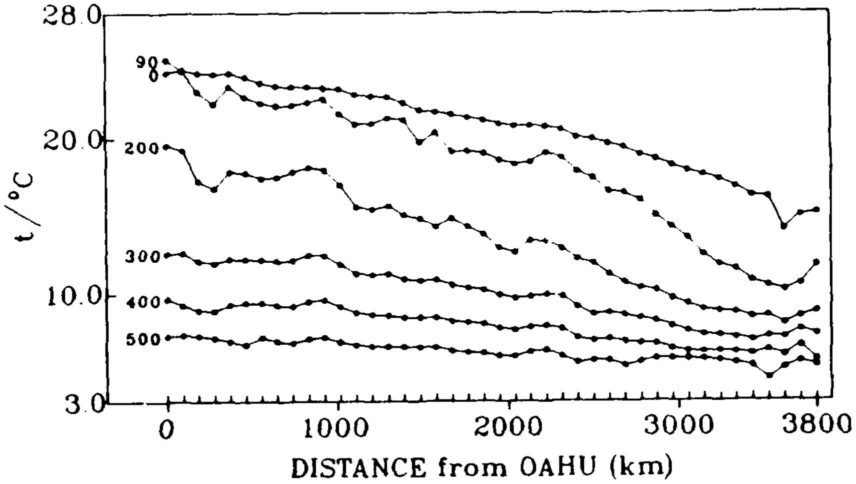

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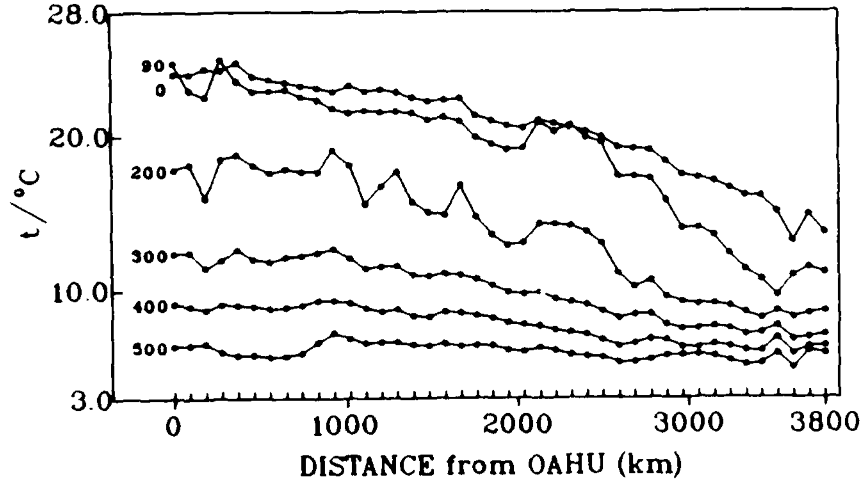

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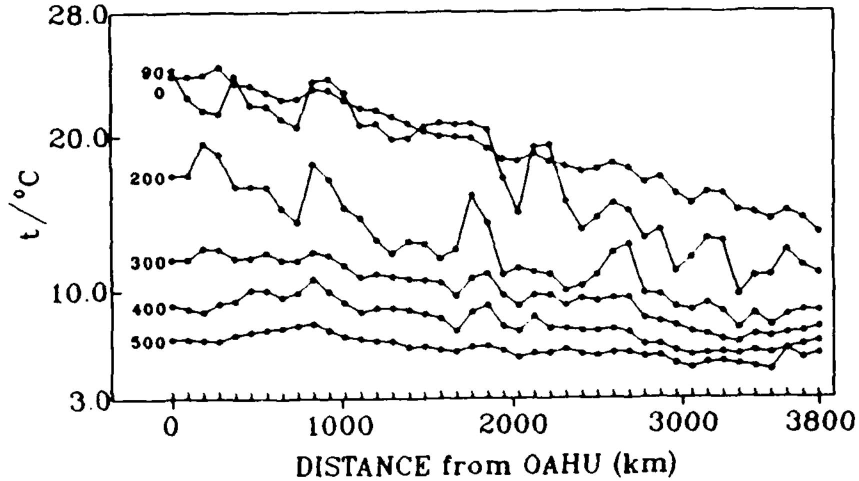

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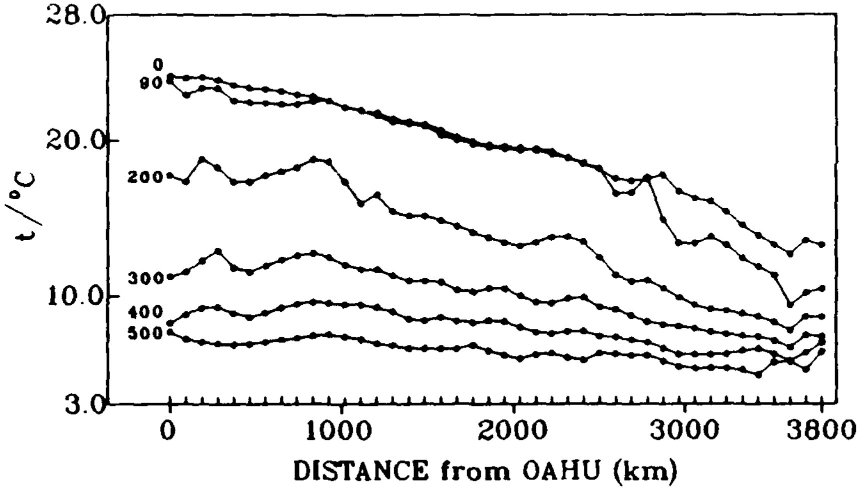

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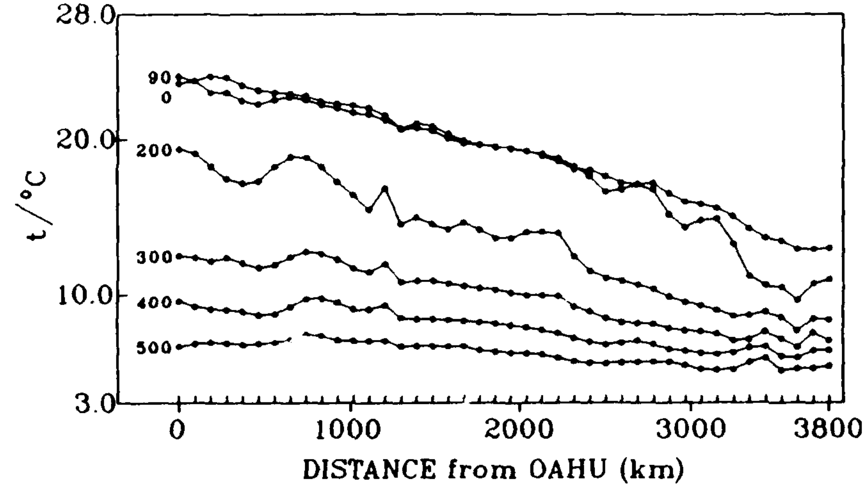

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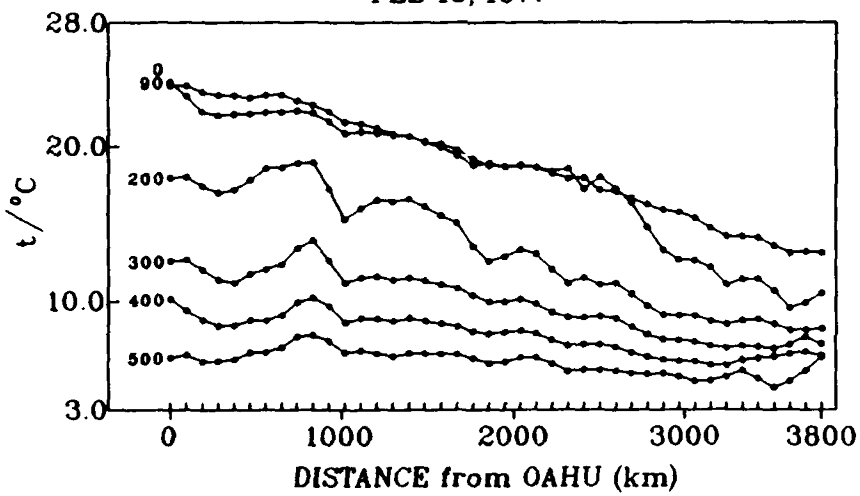

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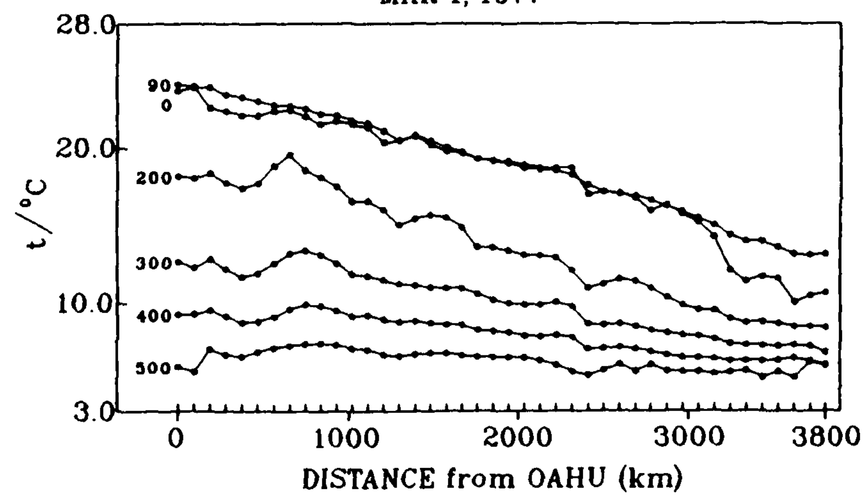

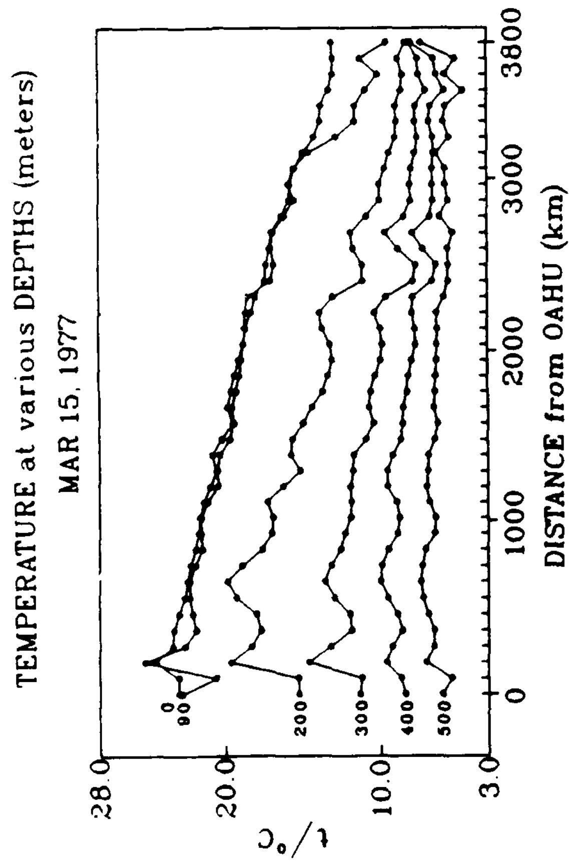
TEMPERATURE at various DEPTHS (meters)
MAR 15, 1977
t/°C
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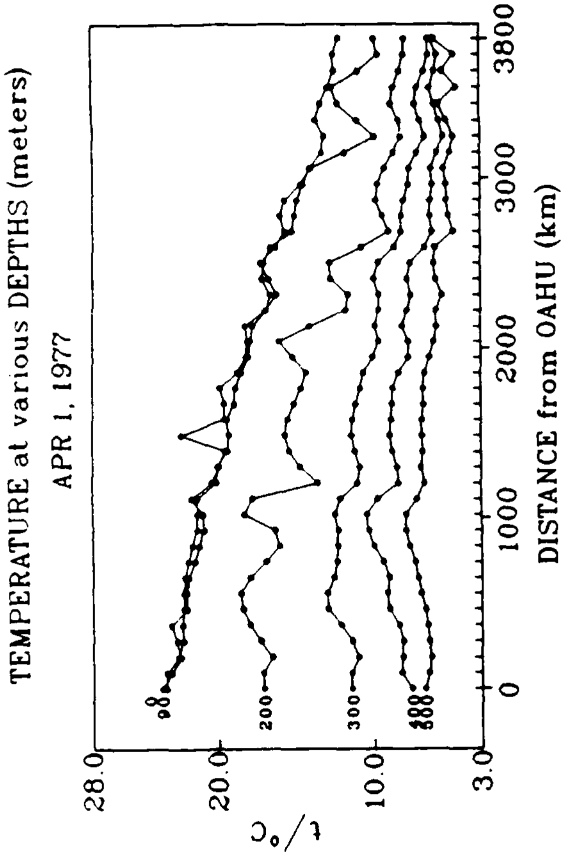
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
APR 1, 1977
t/°C
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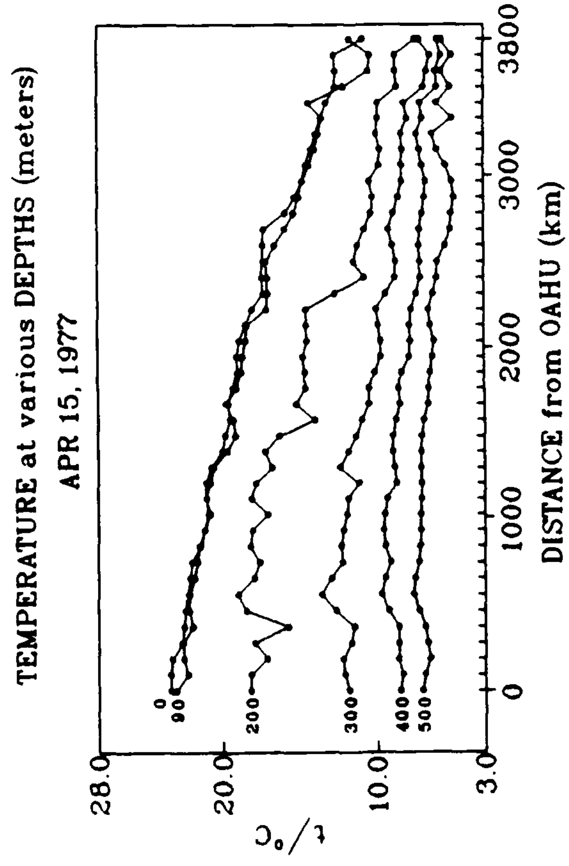
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
APR 15, 1977
t/°C
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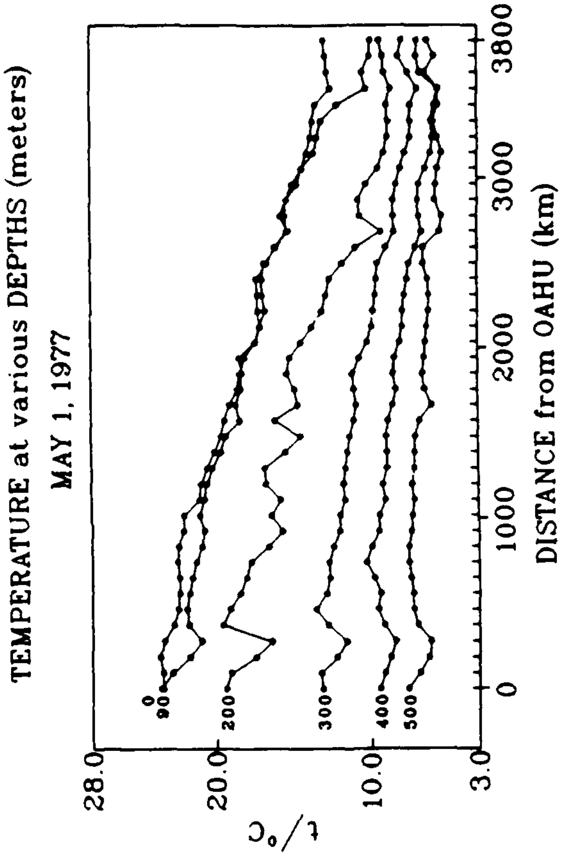
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
MAY 1, 1977
t/°C
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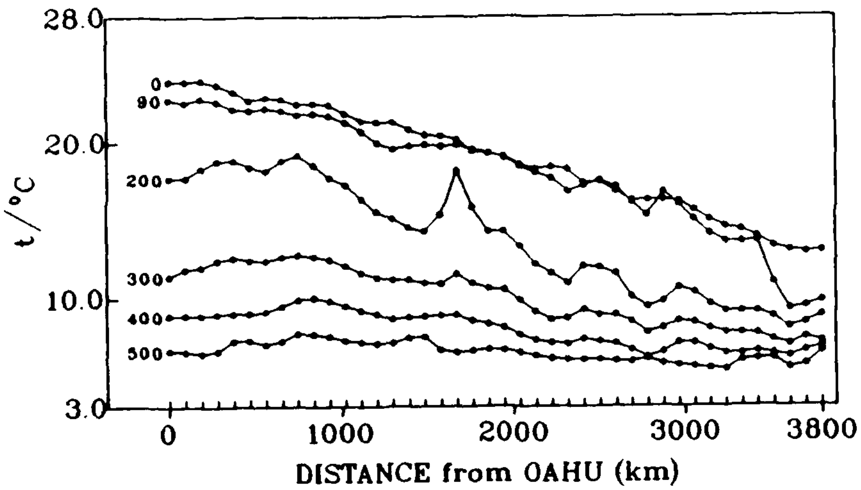
DISTANCE from OAHU (km)

TEMPERATURE at various DEPTHS (meters)
MAY 15, 1977



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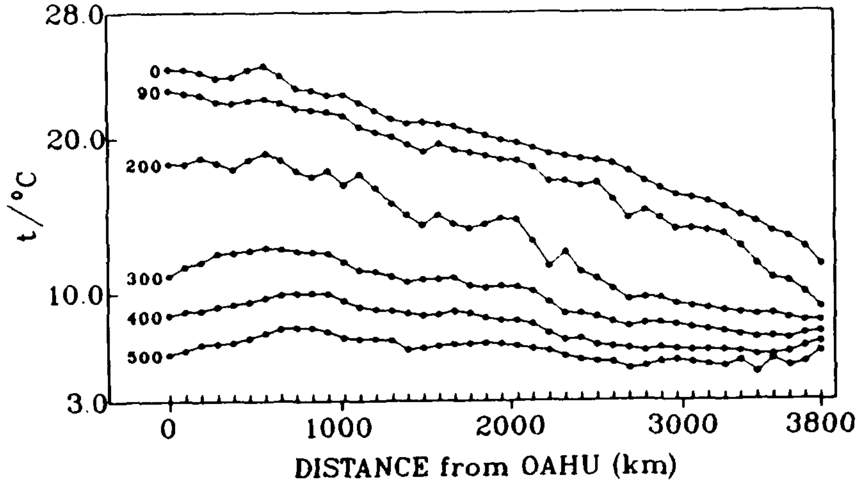

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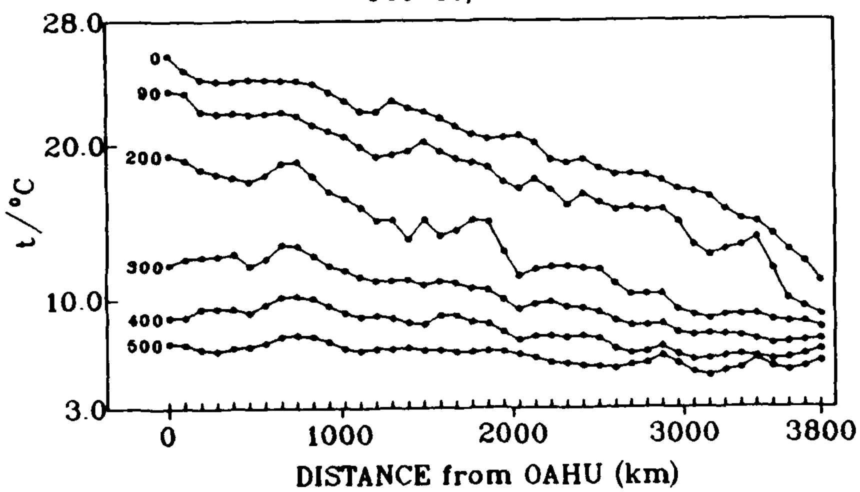

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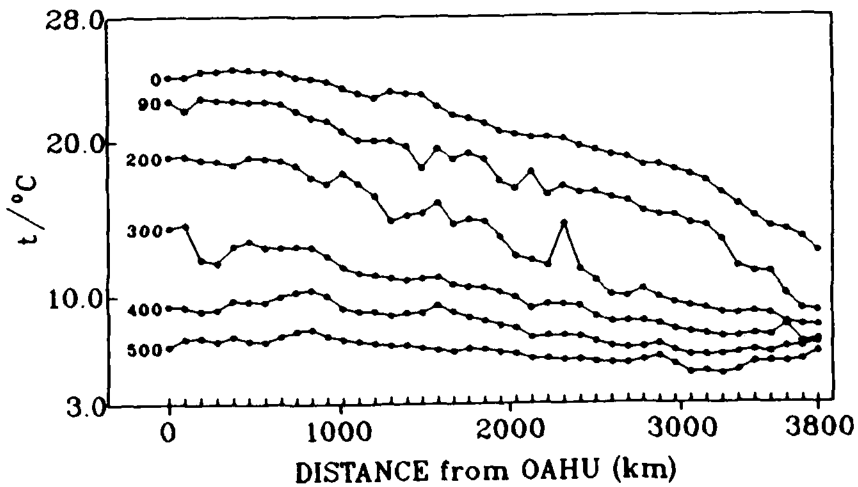

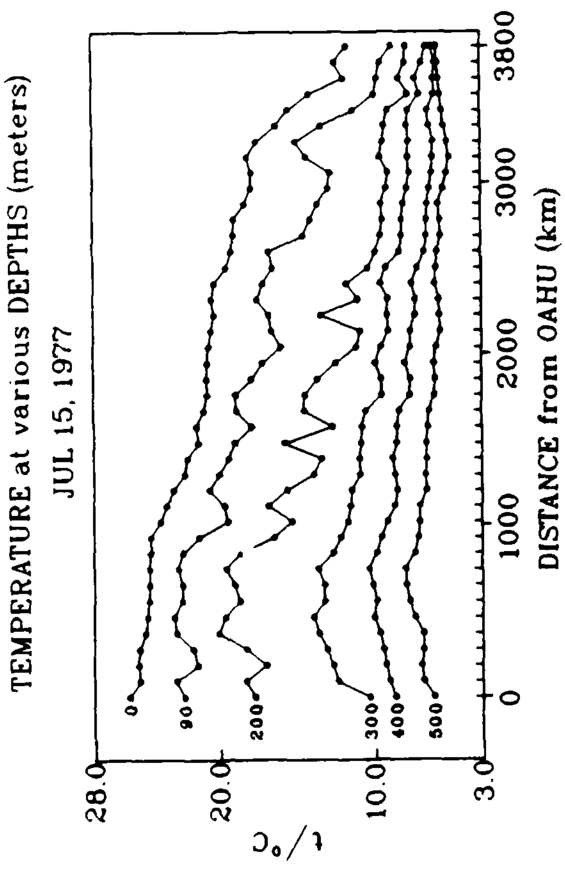
TEMPERATURE at various DEPTHS (meters)
JUL 15, 1977
t/°C
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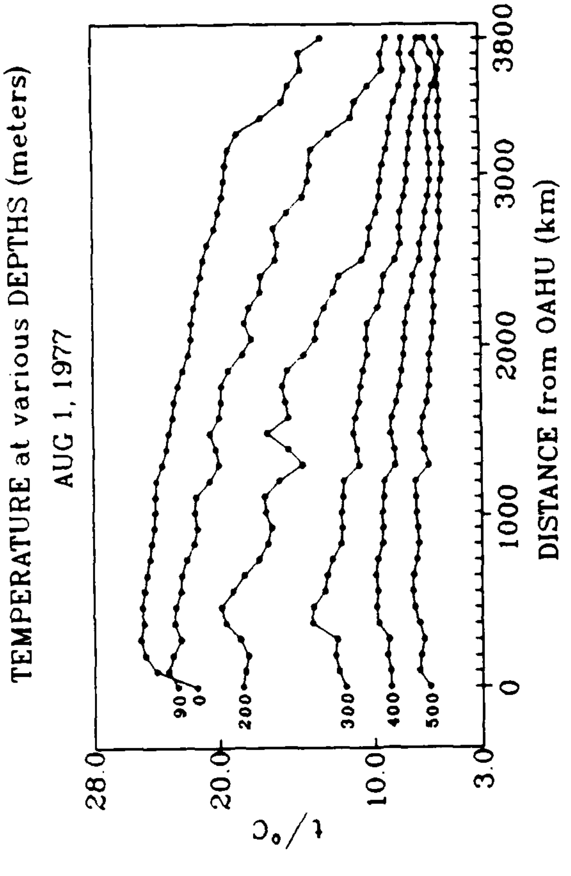
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
AUG 1, 1977
t/°C
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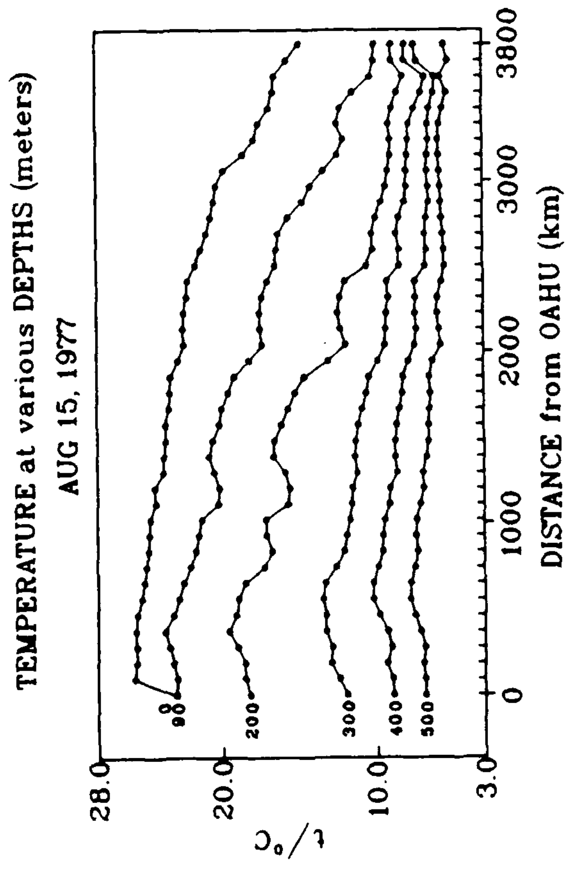
DISTANCE from OAHU (km)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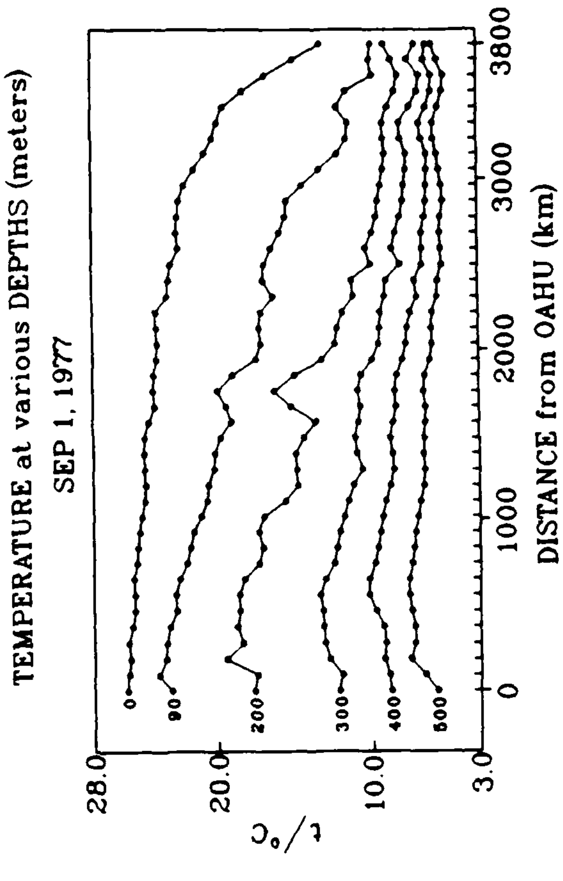
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
SEP 1, 1977
t/°C
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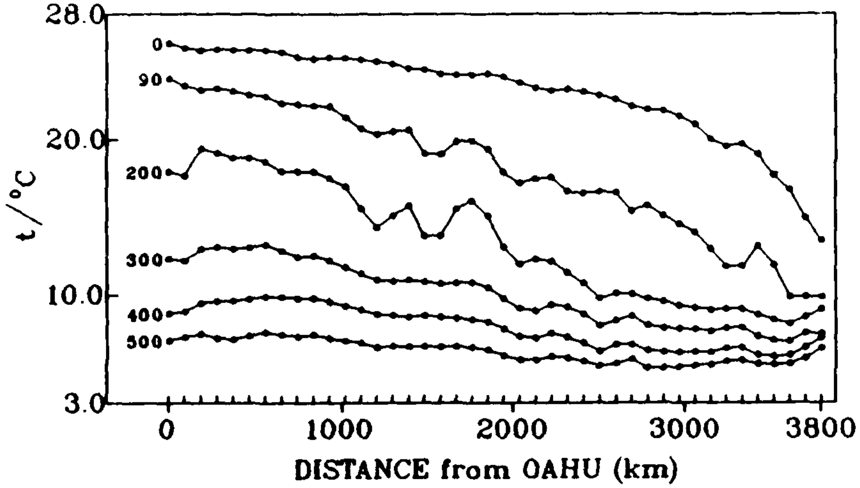
DISTANCE from OAHU (km)

TEMPERATURE at various DEPTHS (meters)
SEP 15, 1977



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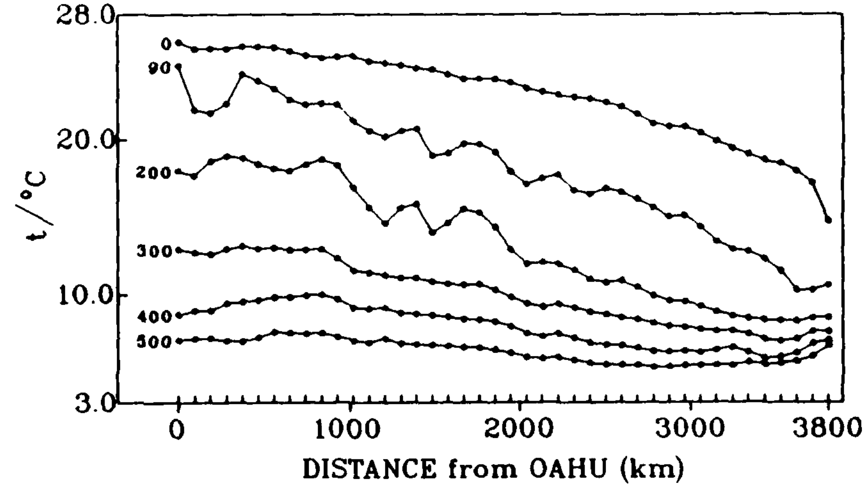
OCT 1, 1977



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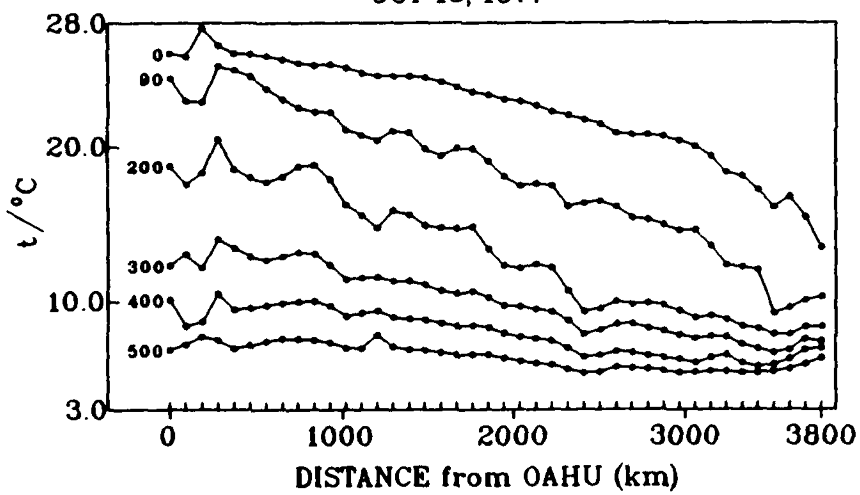
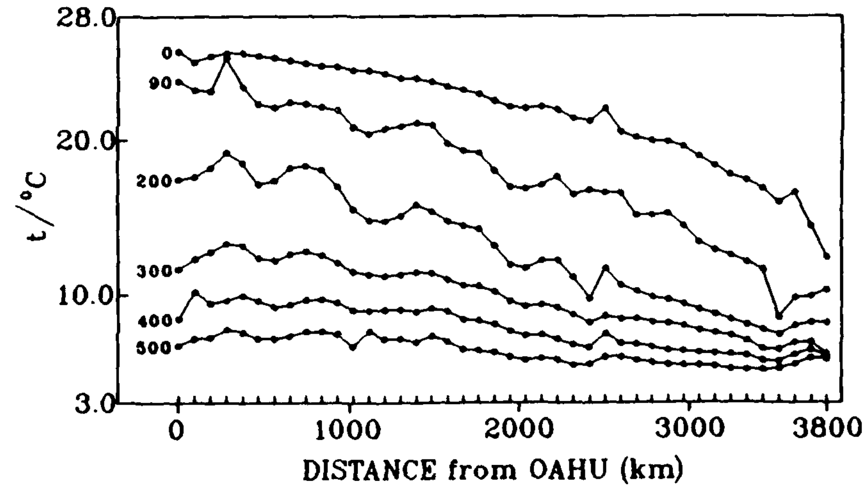


TEMPERATURE at various DEPTHS (meters)
NOV 1, 1977



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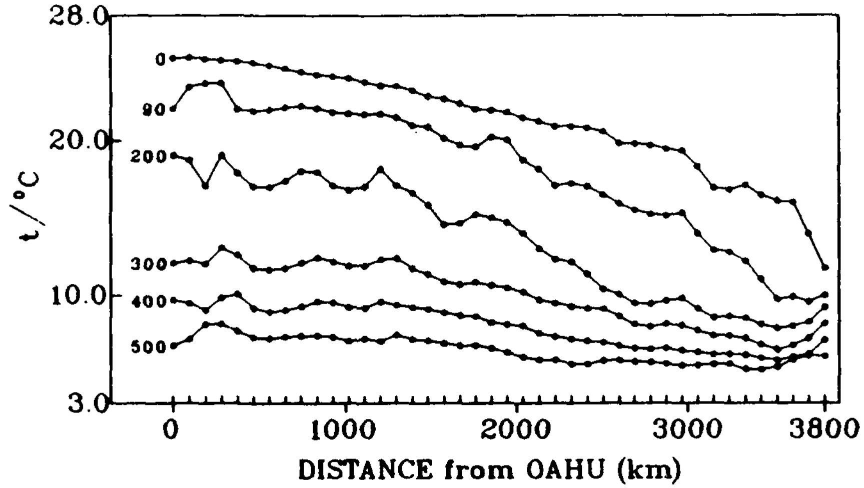

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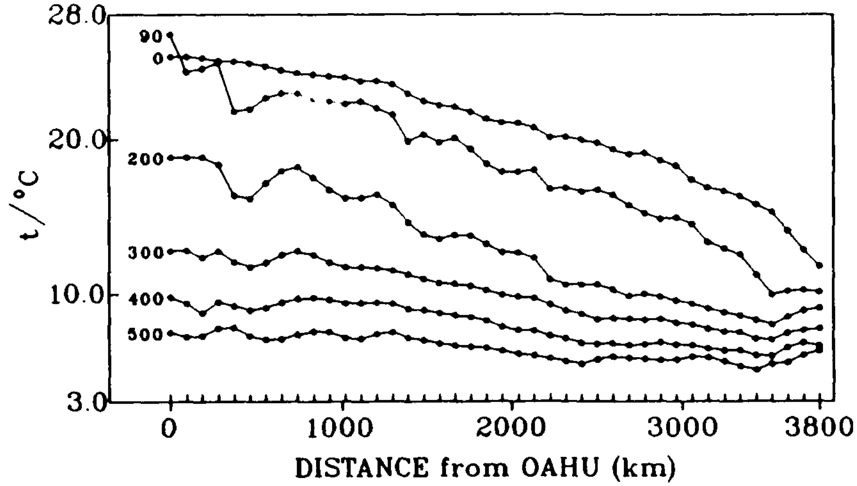

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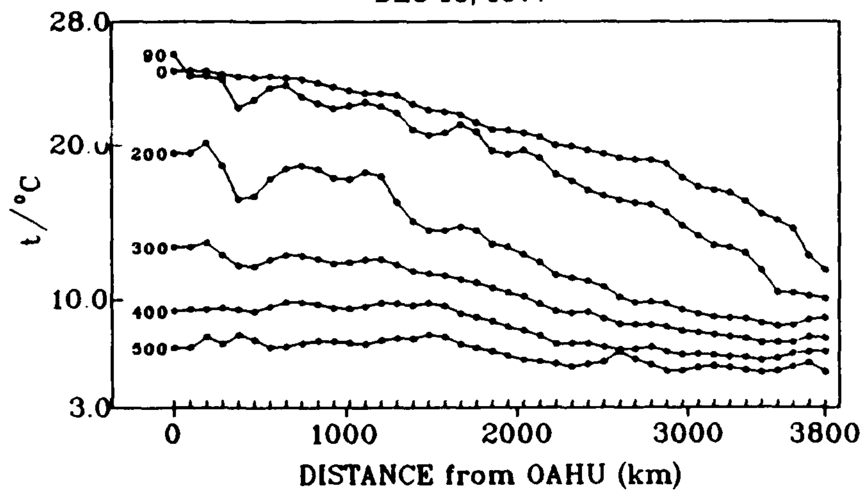
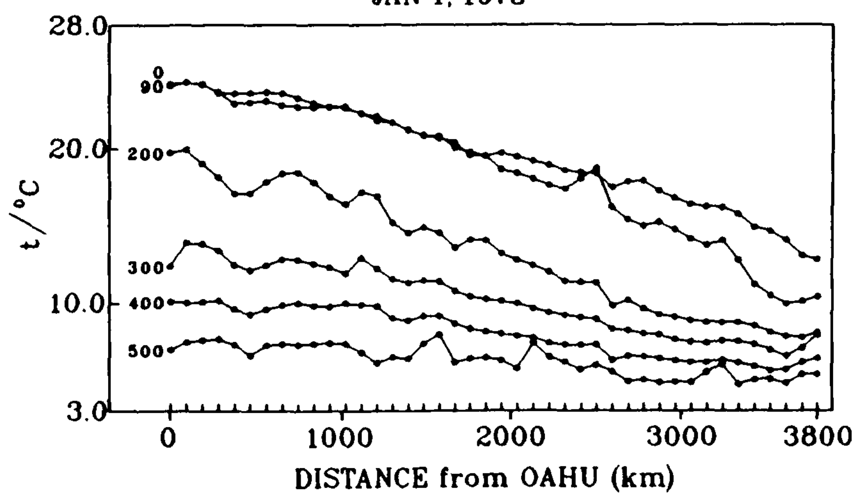
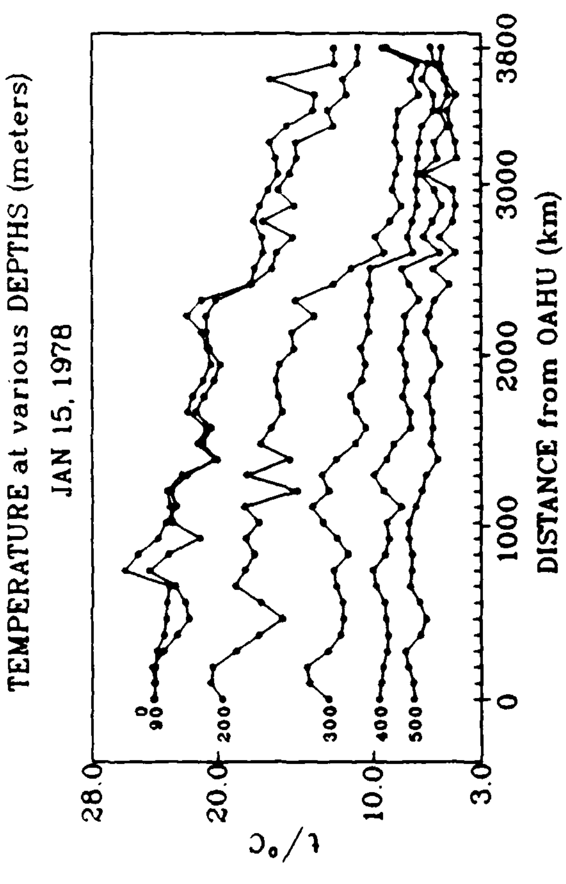


TEMPERATURE at various DEPTHS (meters)
JAN 1, 1978





TEMPERATURE at various DEPTHS (meters)
JAN 15, 1978
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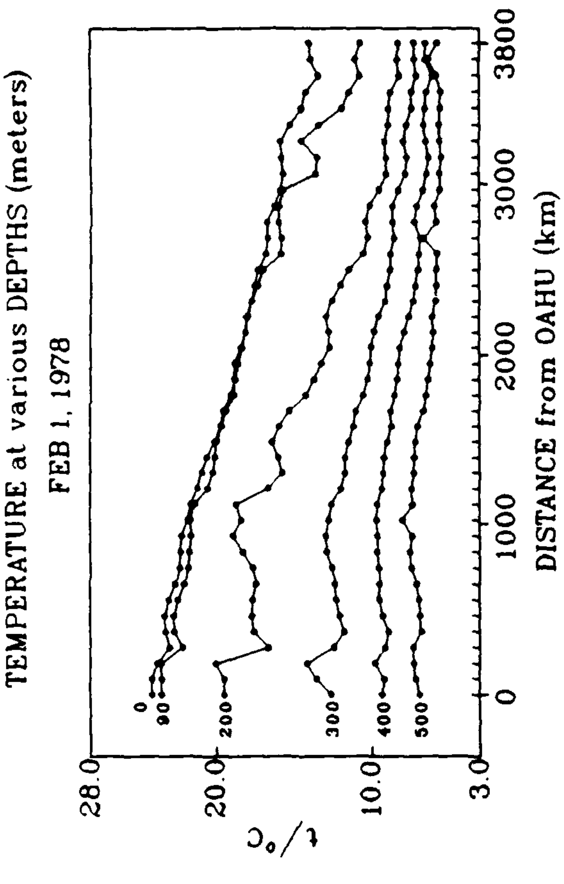
DISTANCE from OAHU (km)



TEMPERATURE at various DEPTHS (meters)
FEB 1, 1978
t/°C
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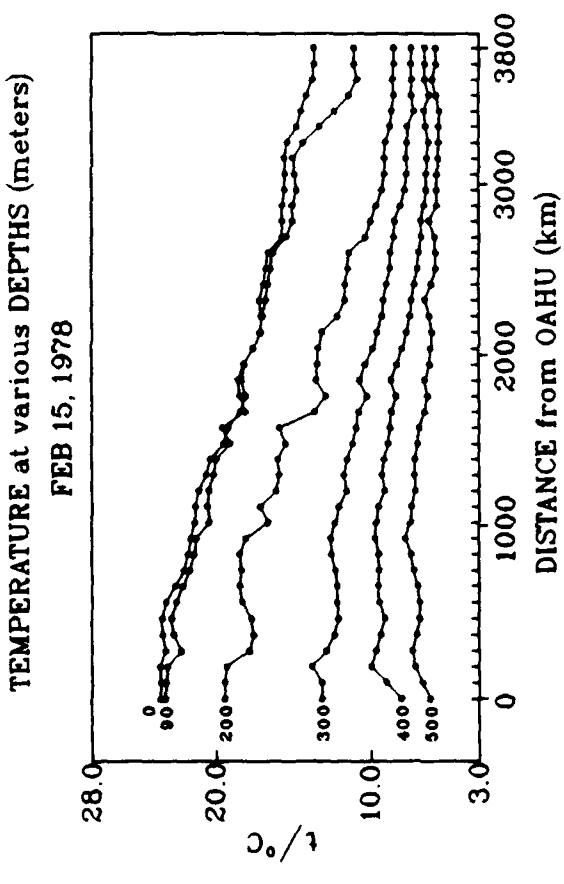
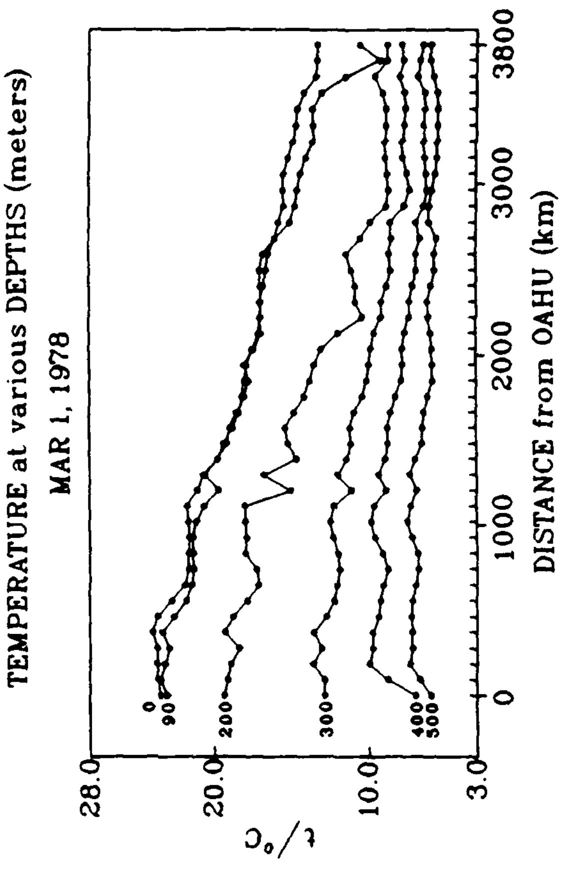
3800
DISTANCE from OAHU (km)

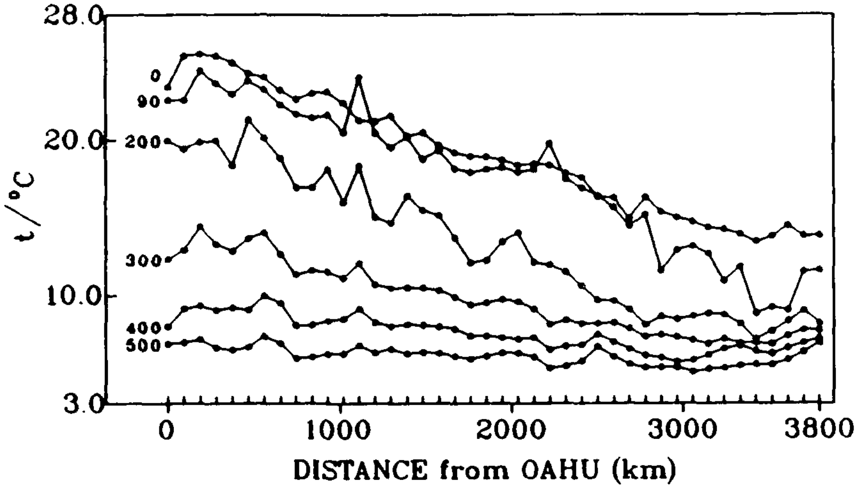


TEMPERATURE at various DEPTHS (meters)
FEB 15, 1978
t/°C
28.0
20.0
10.0
3.0
0
90
200
300
400
500
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

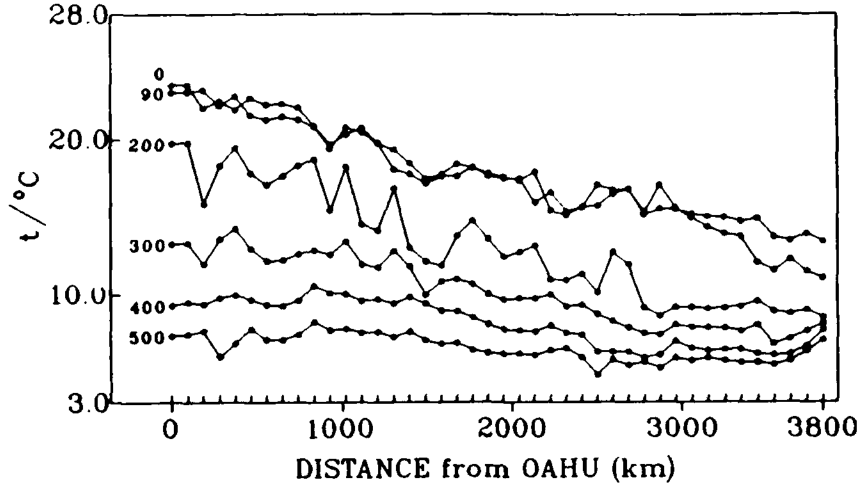


TEMPERATURE at various DEPTHS (meters)
MAR 1, 1978
t/°C
28.0
20.0
10.0
3.0
0
90
200
300
400
500
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

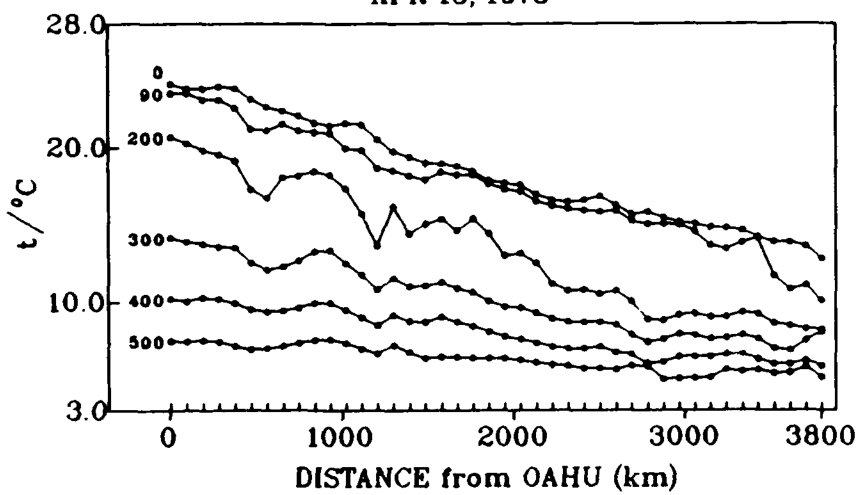
TEMPERATURE at various DEPTHS (meters)
MAR 15, 1978



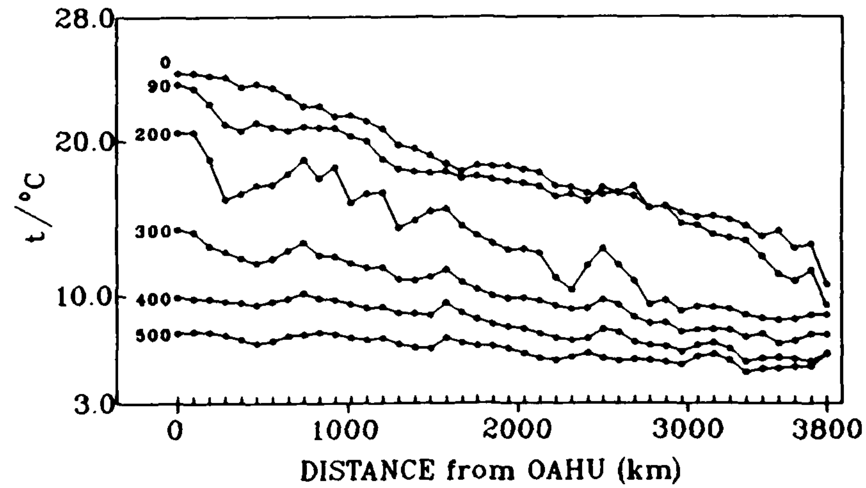
TEMPERATURE at various DEPTHS (meters)
APR 1, 1978



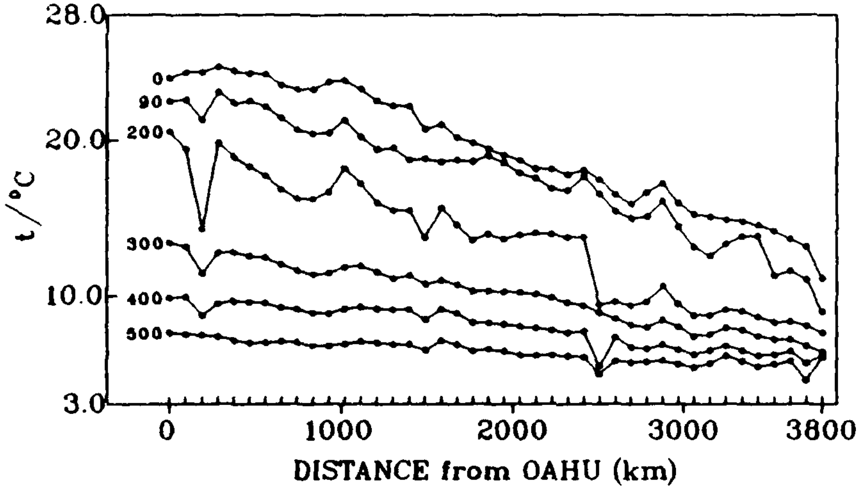
TEMPERATURE at various DEPTHS (meters)
APR 15, 1978



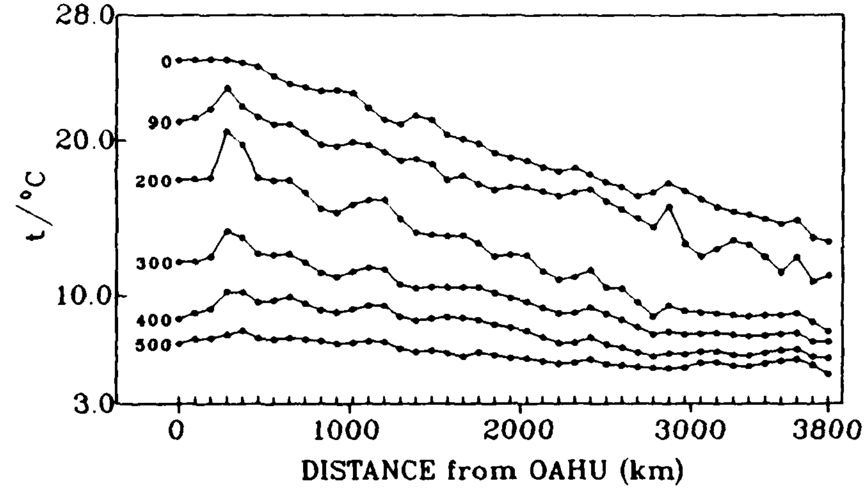
TEMPERATURE at various DEPTHS (meters)
MAY 1, 1978



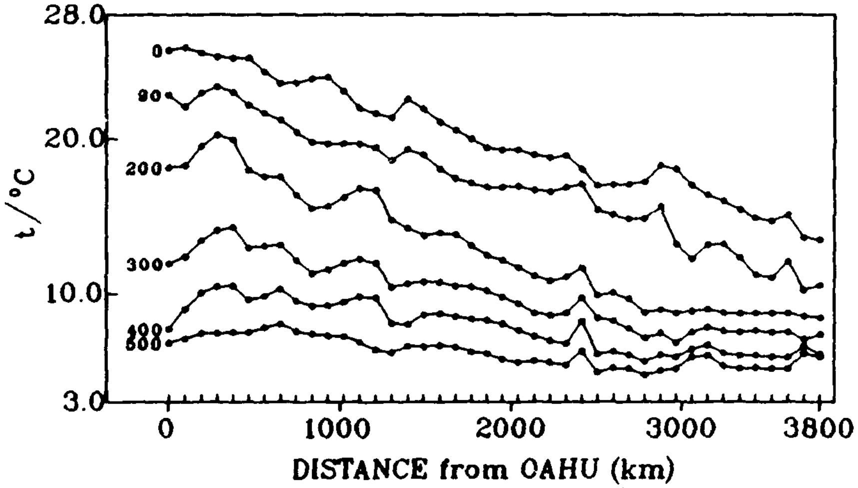
TEMPERATURE at various DEPTHS (meters)
MAY 15, 1978



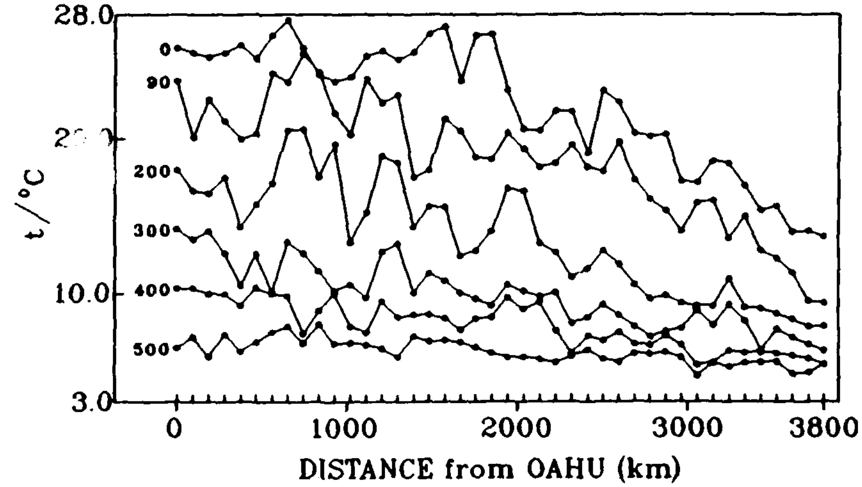
TEMPERATURE at various DEPTHS (meters)
JUN 1, 1978



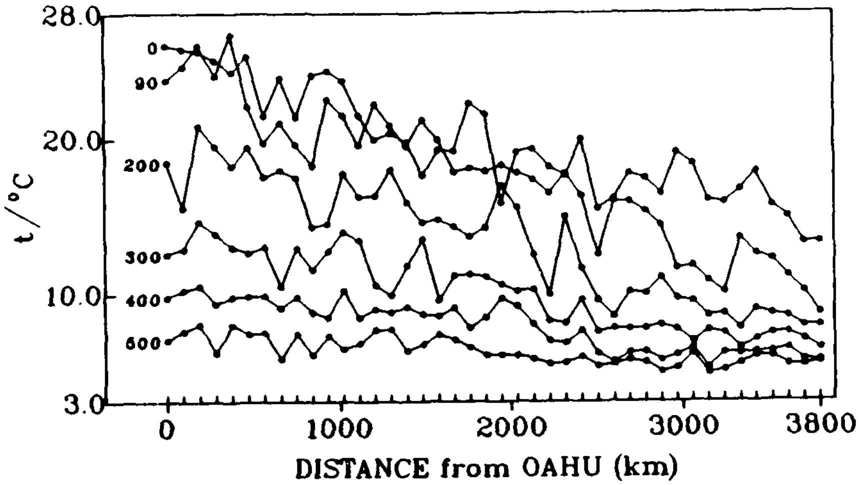
TEMPERATURE at various DEPTHS (meters)
JUN 15, 1978



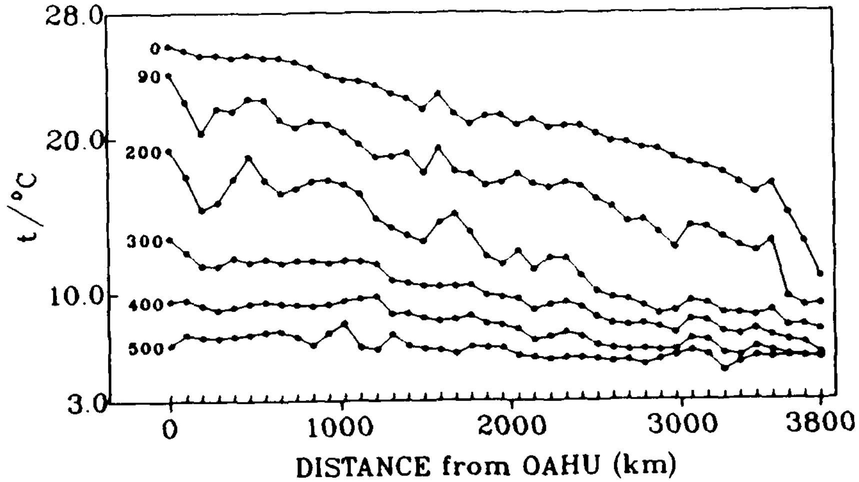
TEMPERATURE at various DEPTHS (meters)
JUL 1, 1978



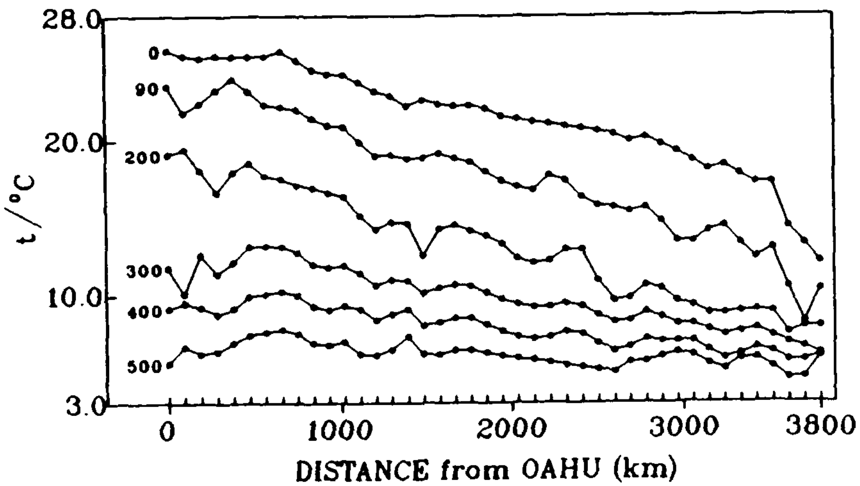
TEMPERATURE at various DEPTHS (meters)
JUL 15, 1978



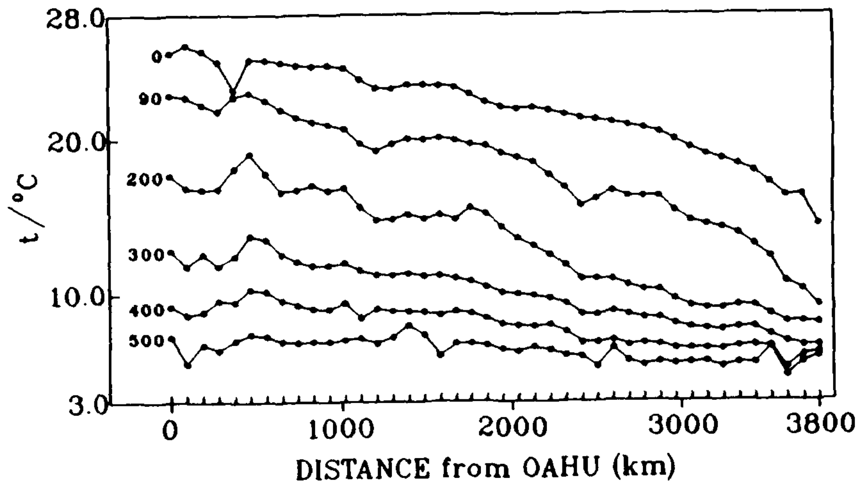
TEMPERATURE at various DEPTHS (meters)
AUG 1, 1978



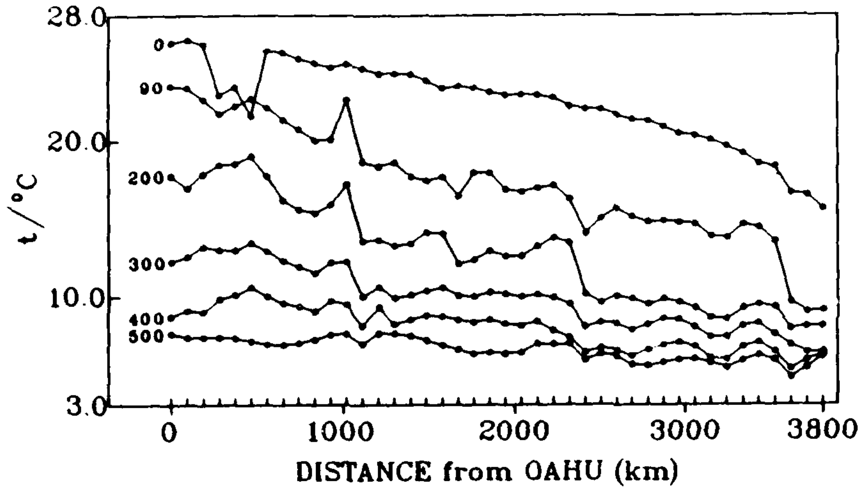
TEMPERATURE at various DEPTHS (meters)
AUG 15, 1978



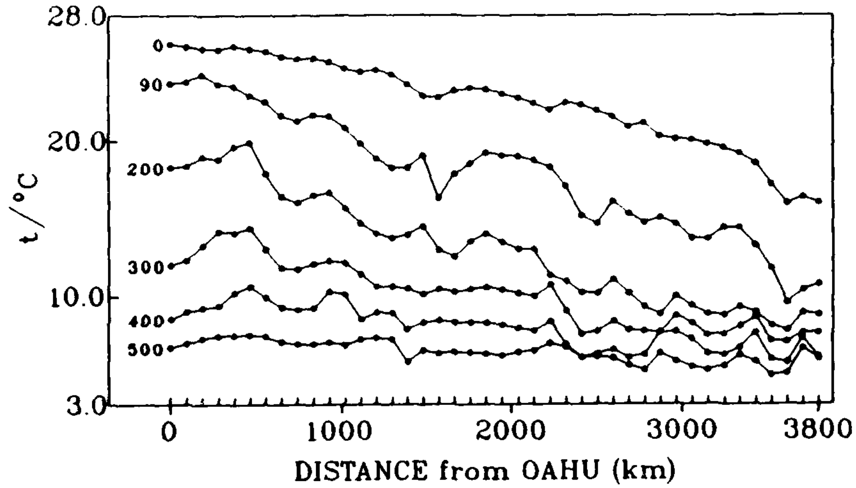
TEMPERATURE at various DEPTHS (meters)
SEP 1, 1978



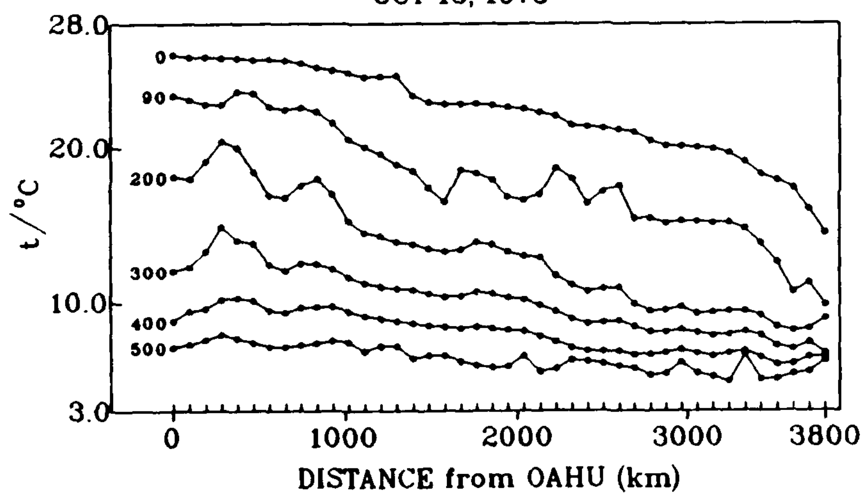
TEMPERATURE at various DEPTHS (meters)
SEP 15, 1978



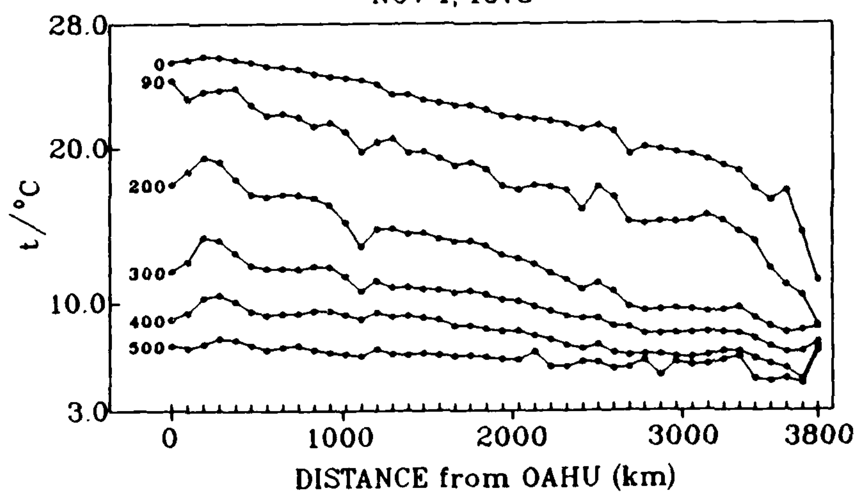
TEMPERATURE at various DEPTHS (meters)
OCT 1, 1978



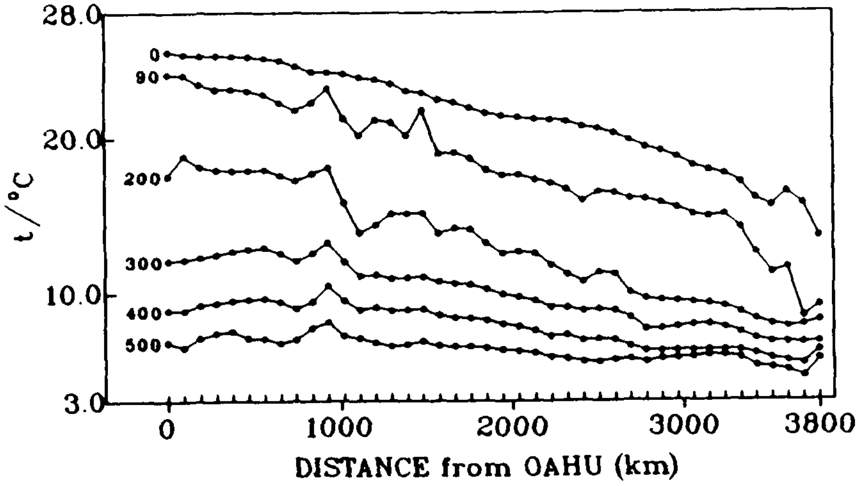
TEMPERATURE at various DEPTHS (meters)
OCT 15, 1978



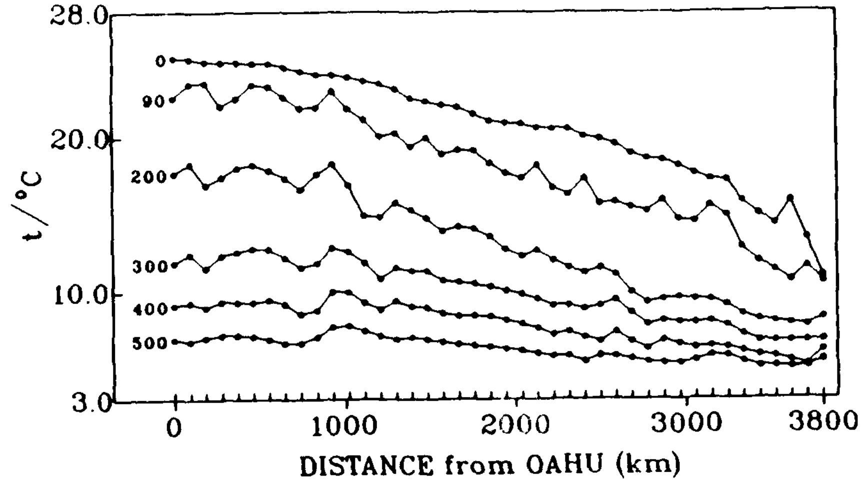
TEMPERATURE at various DEPTHS (meters)
NOV 1, 1978



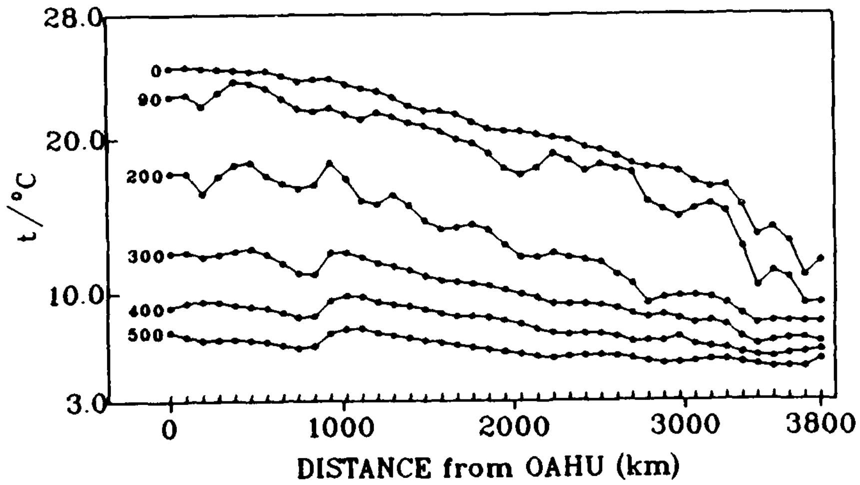
TEMPERATURE at various DEPTHS (meters)
NOV 15, 1978



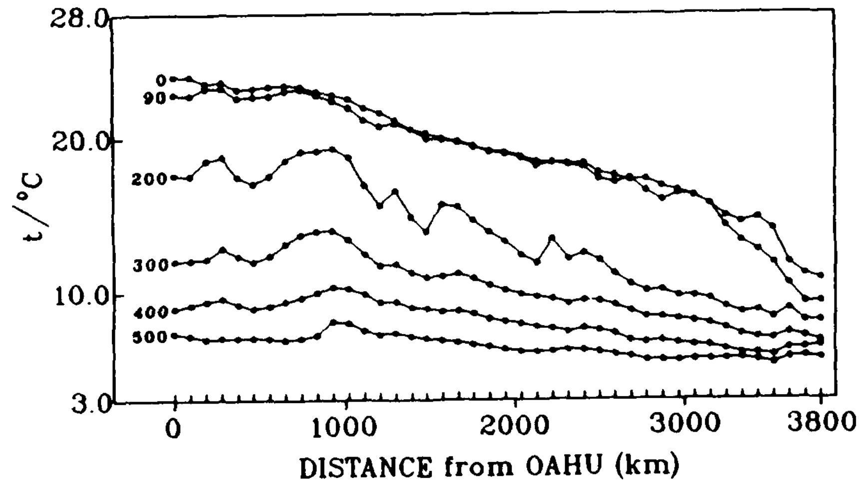
TEMPERATURE at various DEPTHS (meters)
DEC 1, 1978



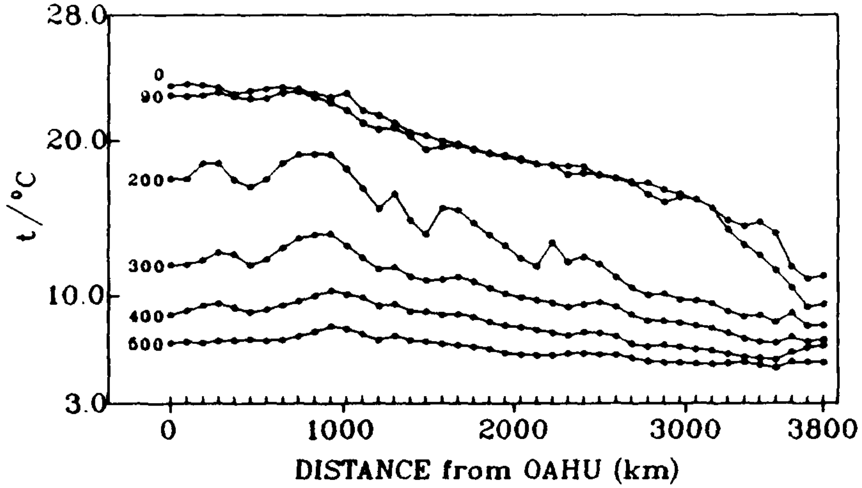
TEMPERATURE at various DEPTHS (meters)
DEC 15, 1978



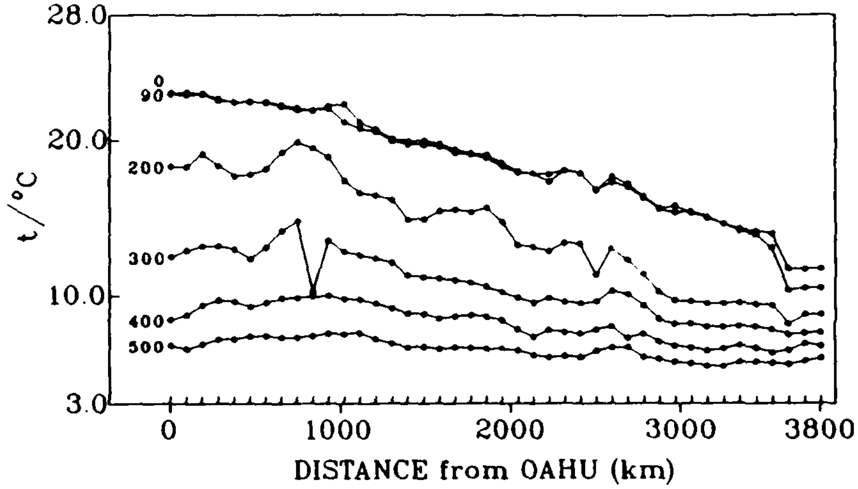
TEMPERATURE at various DEPTHS (meters)
JAN 1, 1979



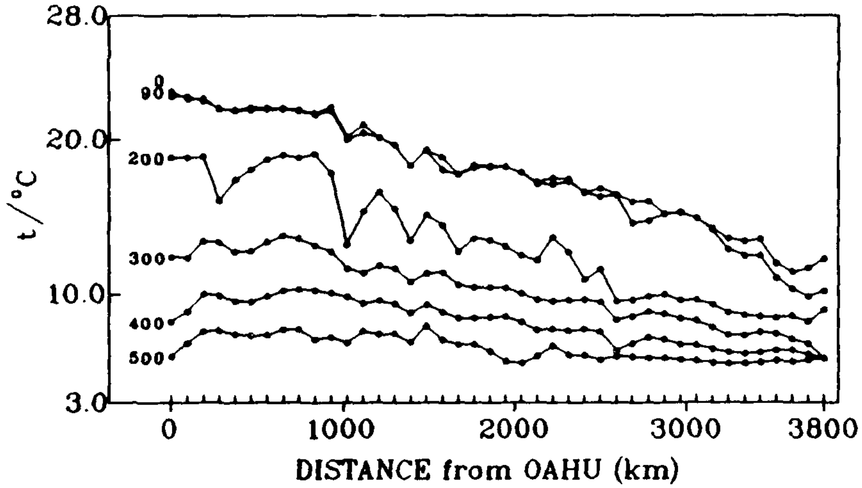
TEMPERATURE at various DEPTHS (meters)
JAN 15, 1979



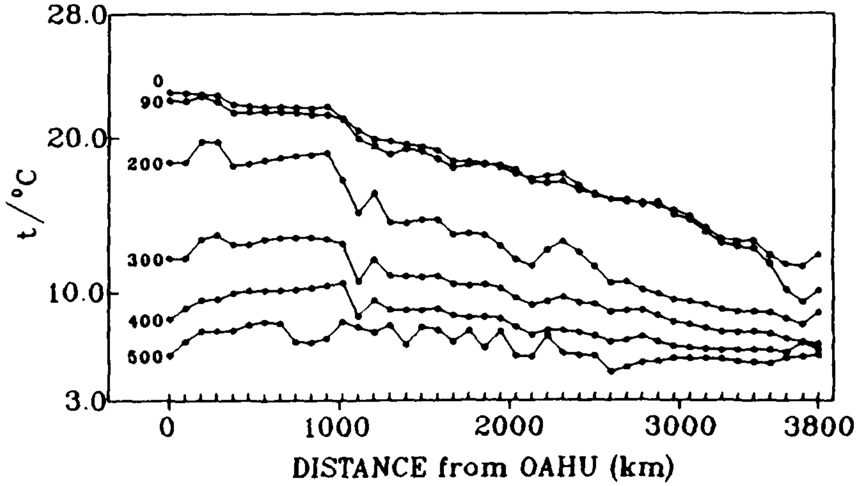
TEMPERATURE at various DEPTHS (meters)
FEB 1, 1979

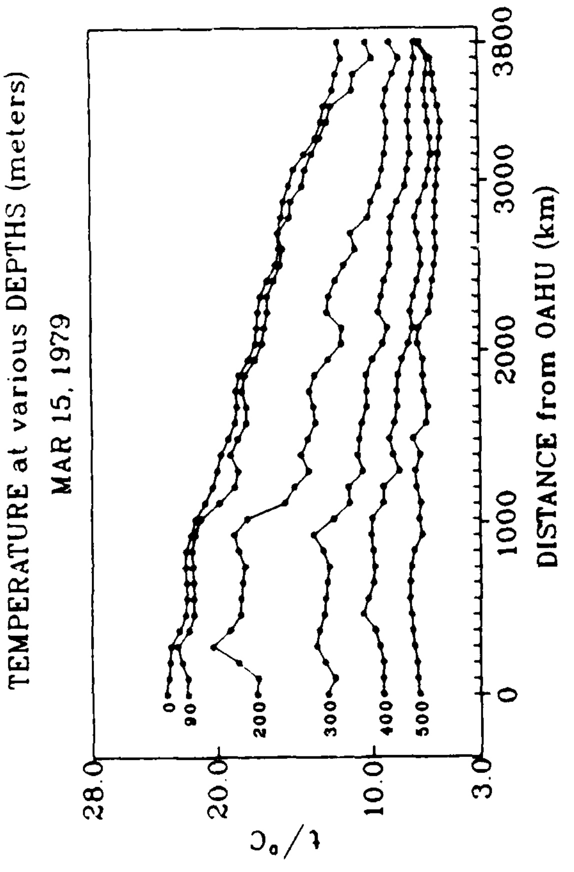


TEMPERATURE at various DEPTHS (meters)
FEB 15, 1979



TEMPERATURE at various DEPTHS (meters)
MAR 1, 1979




TEMPERATURE at various DEPTHS (meters)
MAR 15, 1979
t/°C
28.0
20.0
10.0
3.0
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90
200
300
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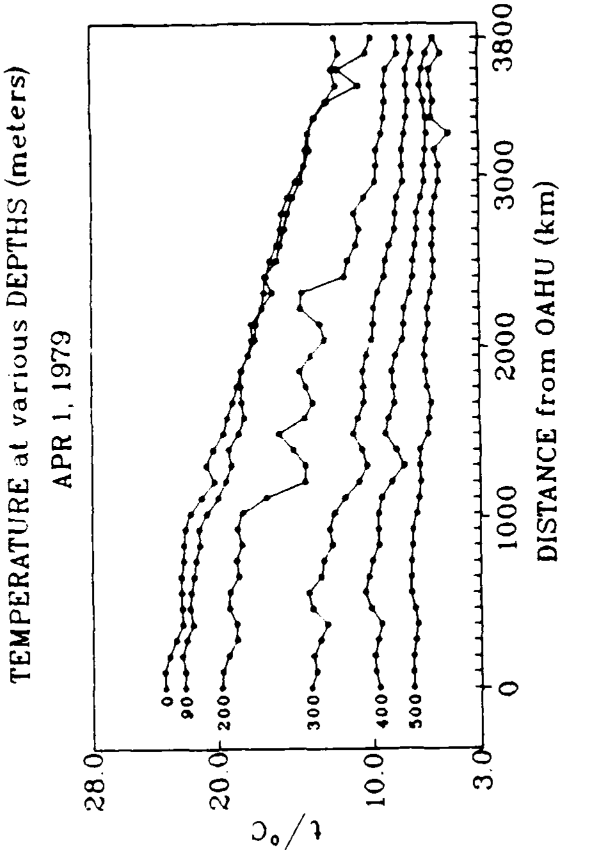
3000
3800
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
APR 1, 1979
t/°C
28.0
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10.0
3.0
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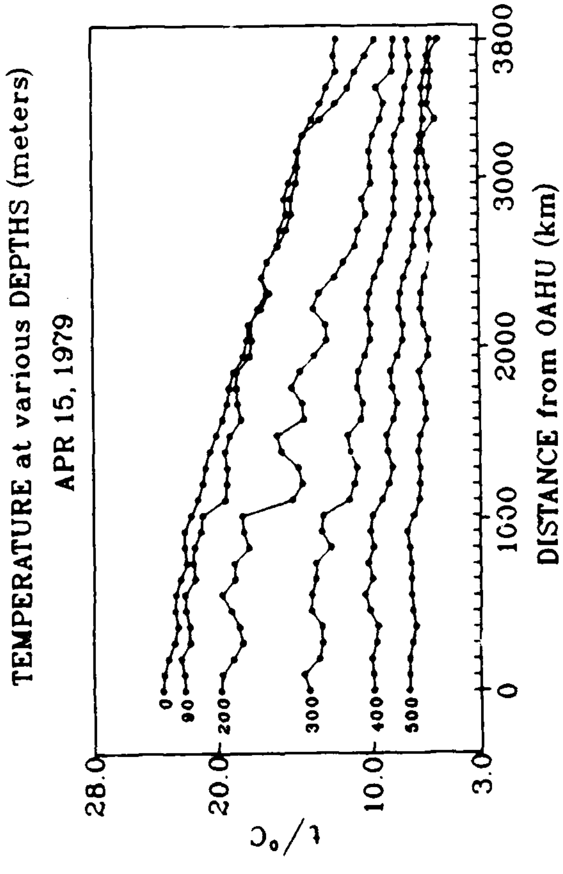
3800
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
APR 15, 1979
t/°C
28.0
20.0
10.0
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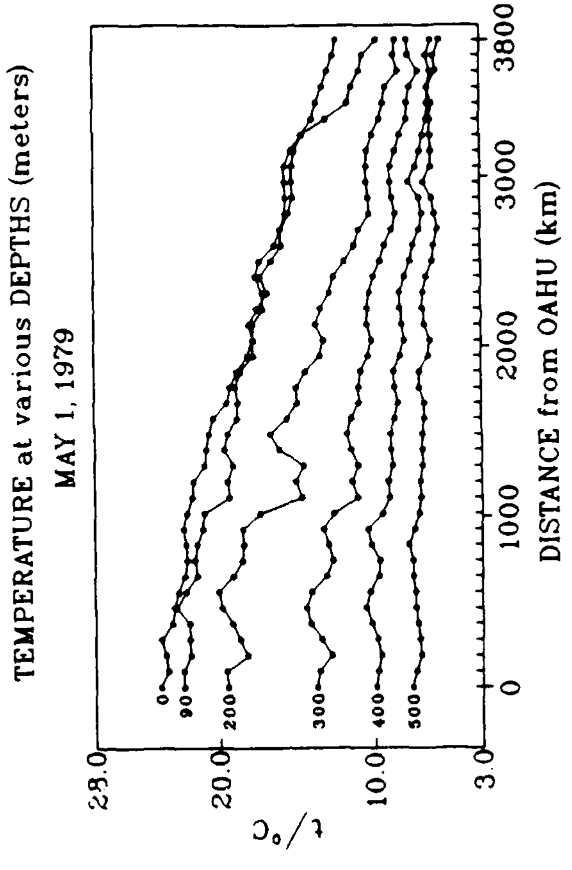
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
MAY 1, 1979
t/°C
28.0
20.0
10.0
3.0
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90
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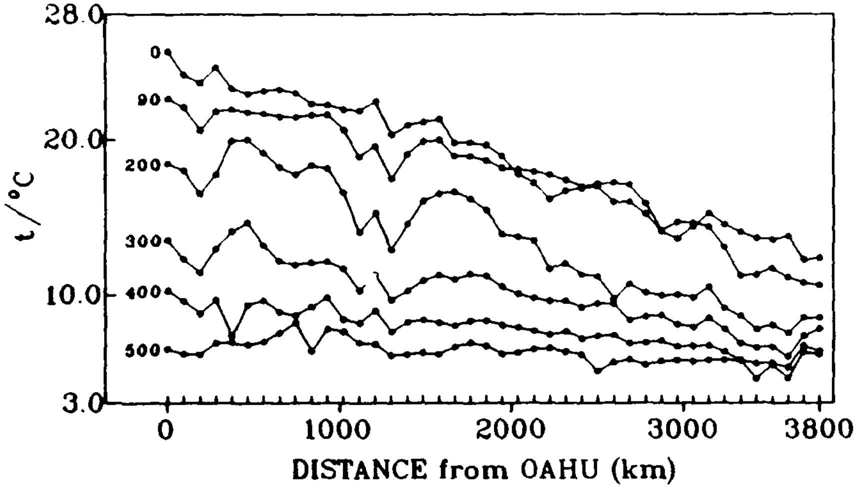
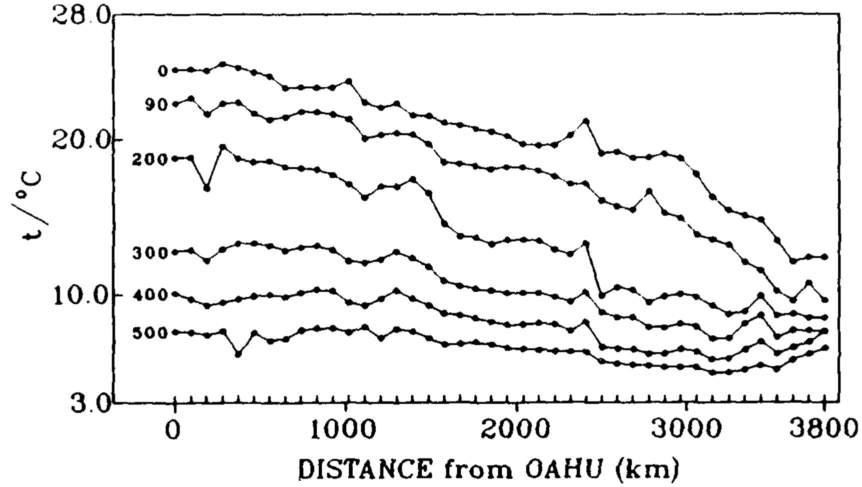
3800
DISTANCE from OAHU (km)

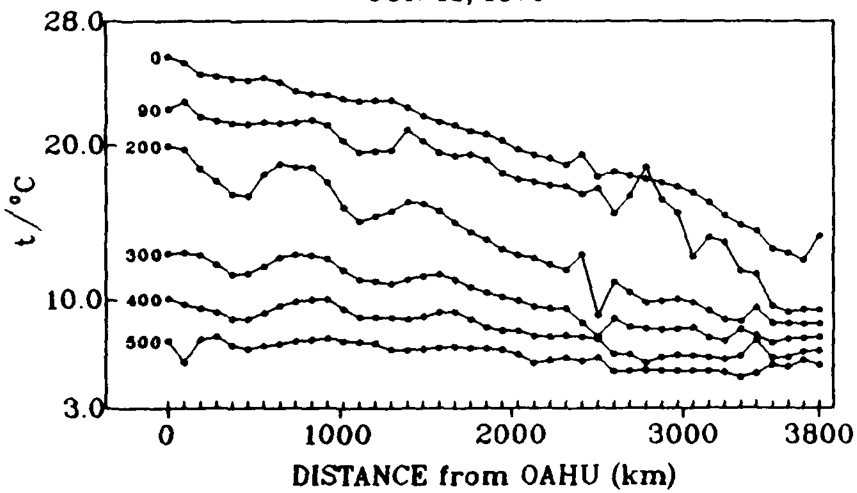
TEMPERATURE at various DEPTHS (meters)
MAY 15, 1979



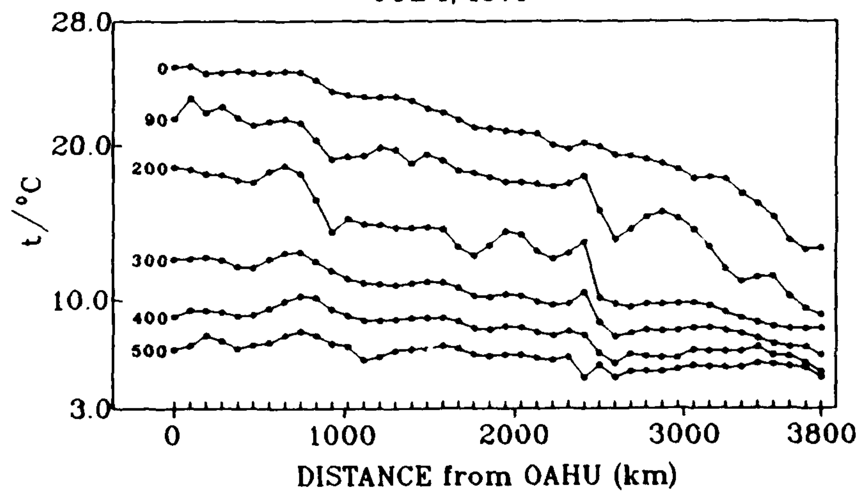
TEMPERATURE at various DEPTHS (meters)
JUN 1, 1979



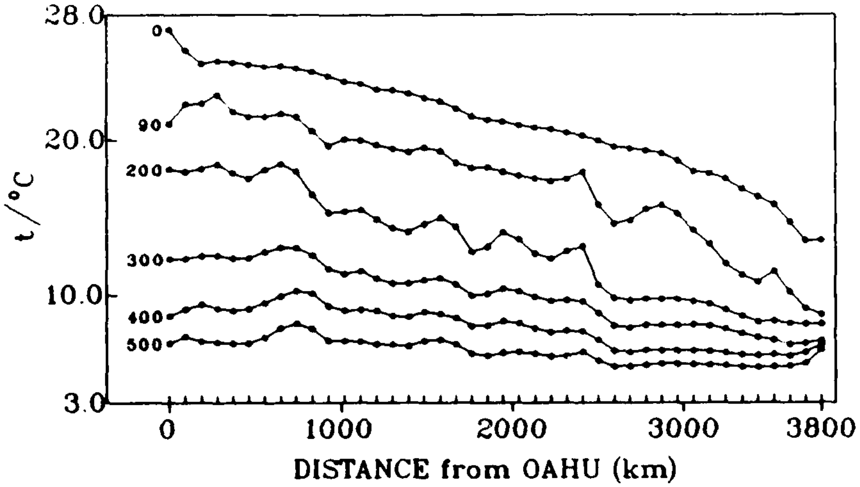
TEMPERATURE at various DEPTHS (meters)
JUN 15, 1979



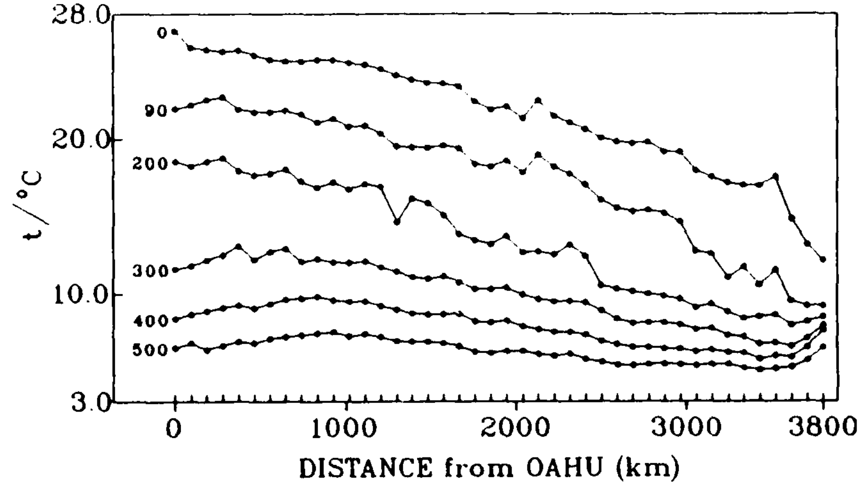
TEMPERATURE at various DEPTHS (meters)
JUL 1, 1979



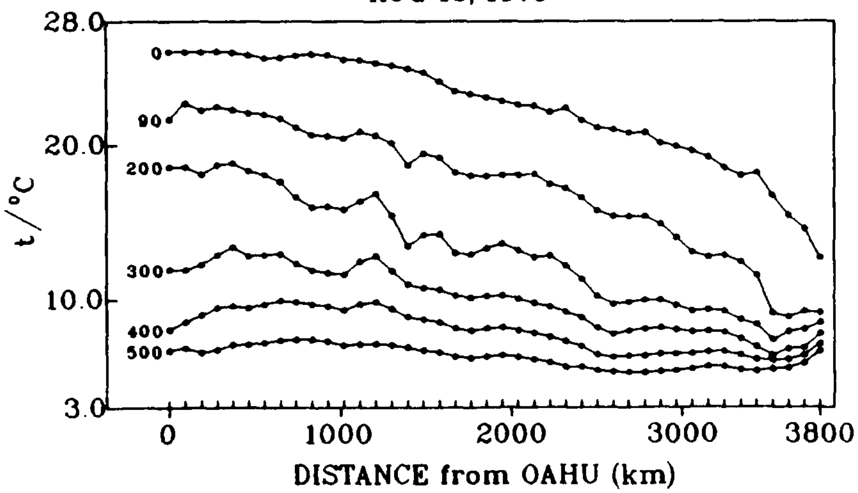
TEMPERATURE at various DEPTHS (meters)
JUL 15, 1979



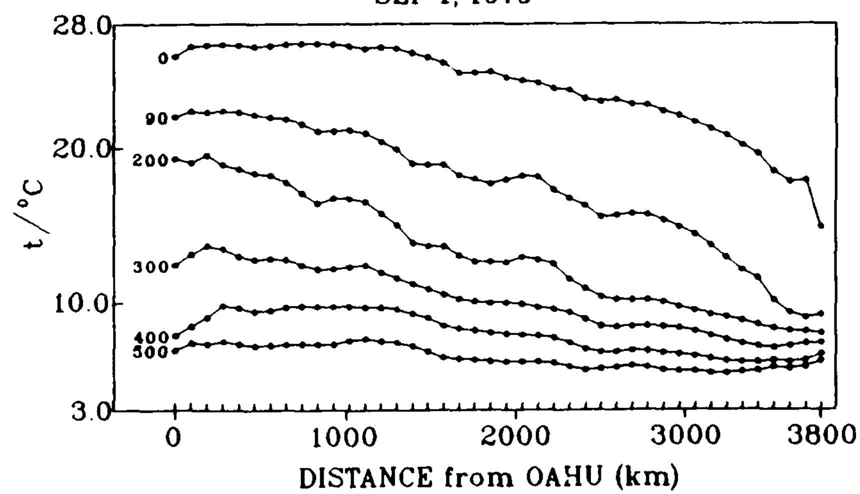
TEMPERATURE at various DEPTHS (meters)
AUG 1, 1979

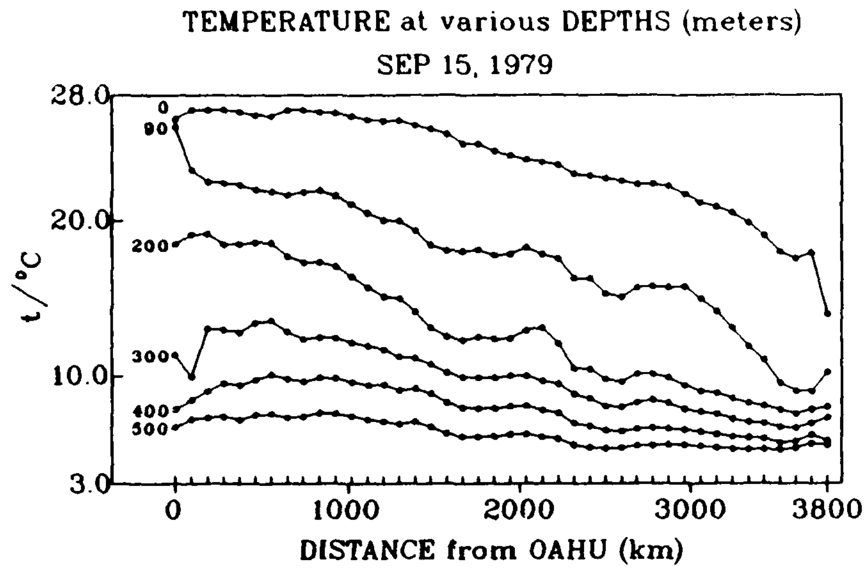


TEMPERATURE at various DEPTHS (meters)
AUG 15, 1979



TEMPERATURE at various DEPTHS (meters)
SEP 1, 1979




TEMPERATURE at various DEPTHS (meters)
SEP 15, 1979
28.0
20.0
10.0
3.0
t/°C
0
90
200
300
400
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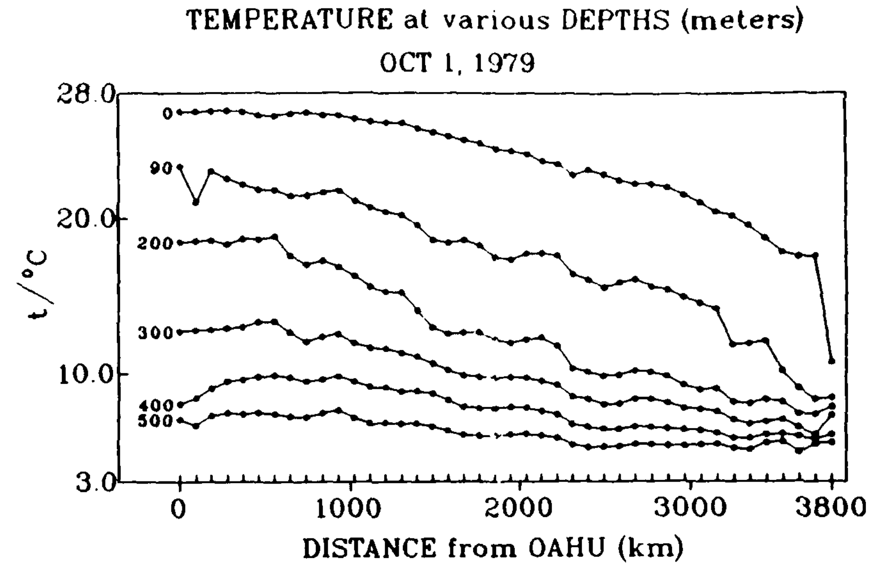
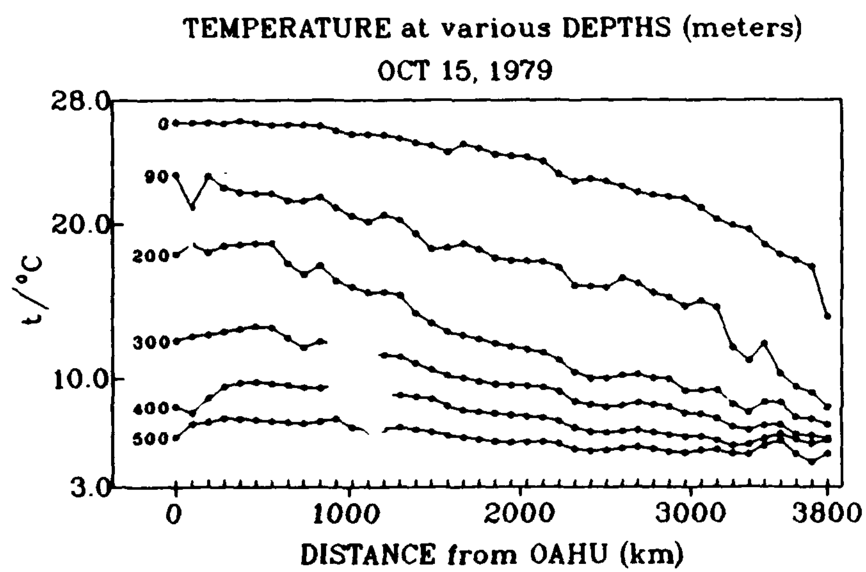
1000
2000
3000
3800
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
OCT 1, 1979
28.0
20.0
10.0
3.0
t/°C
0
90
200
300
400
500
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
OCT 15, 1979
28.0
20.0
10.0
3.0
t/°C
0
90
200
300
400
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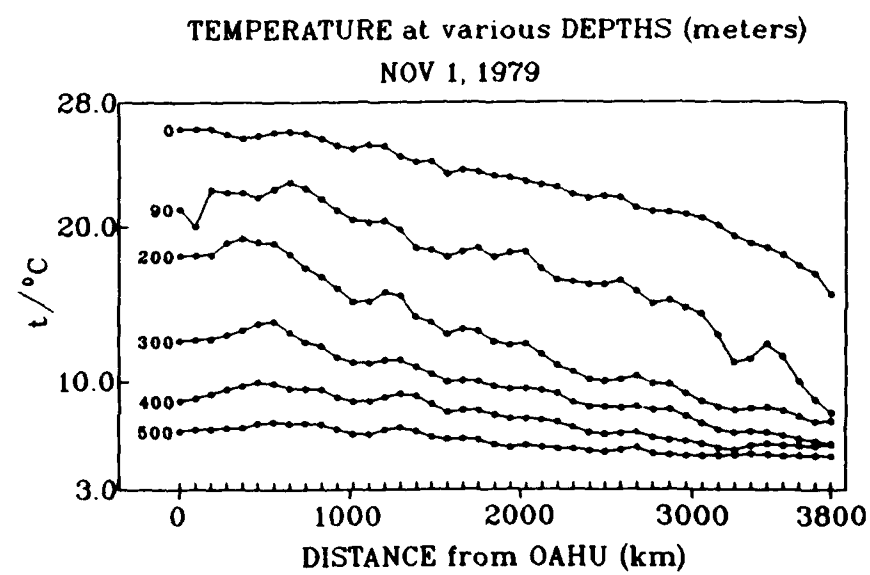
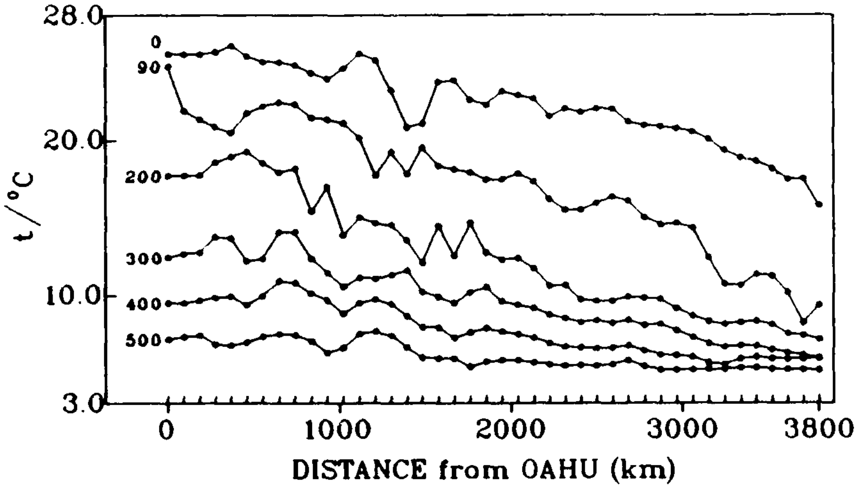
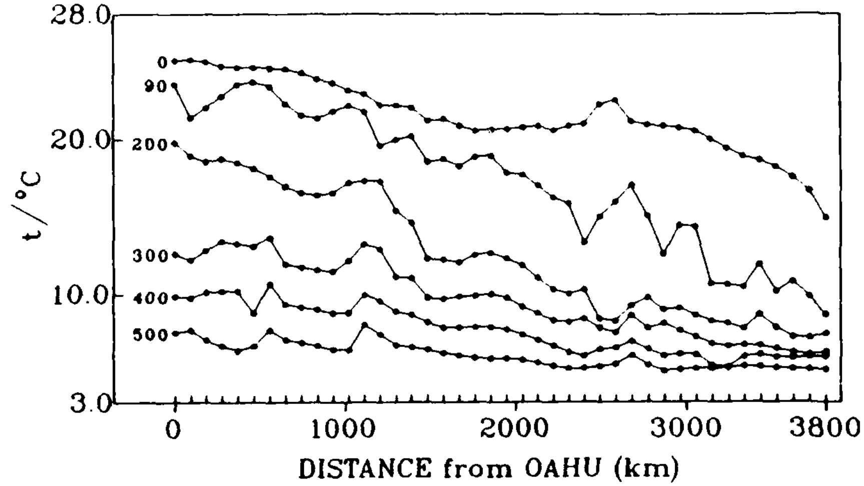
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
NOV 1, 1979
28.0
20.0
10.0
3.0
t/°C
0
90
200
300
400
500
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

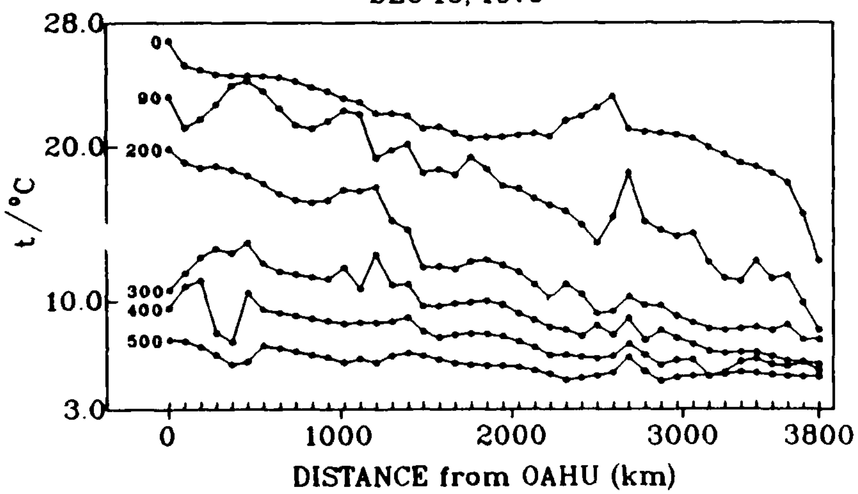
TEMPERATURE at various DEPTHS (meters)
NOV 15, 1979



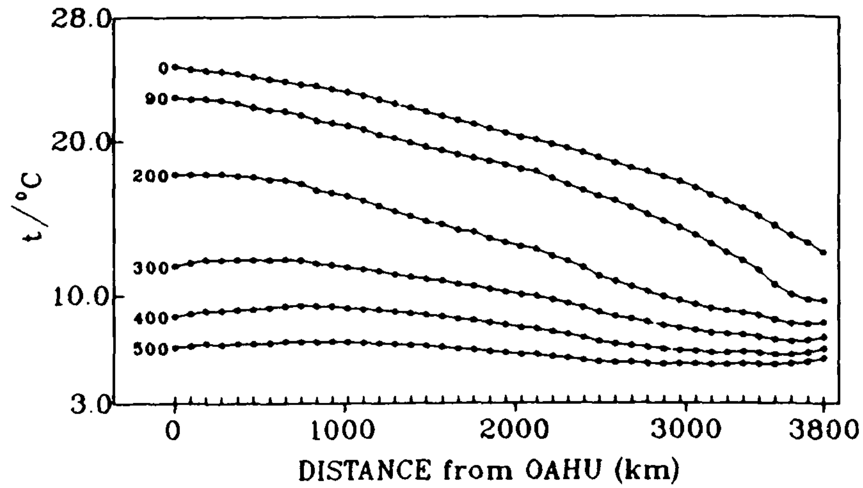
TEMPERATURE at various DEPTHS (meters)
DEC 1, 1979



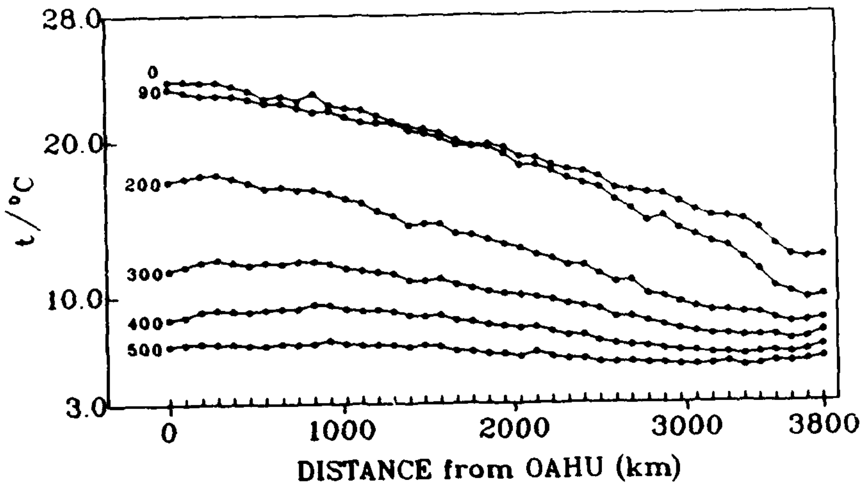
TEMPERATURE at various DEPTHS (meters)
DEC 15, 1979



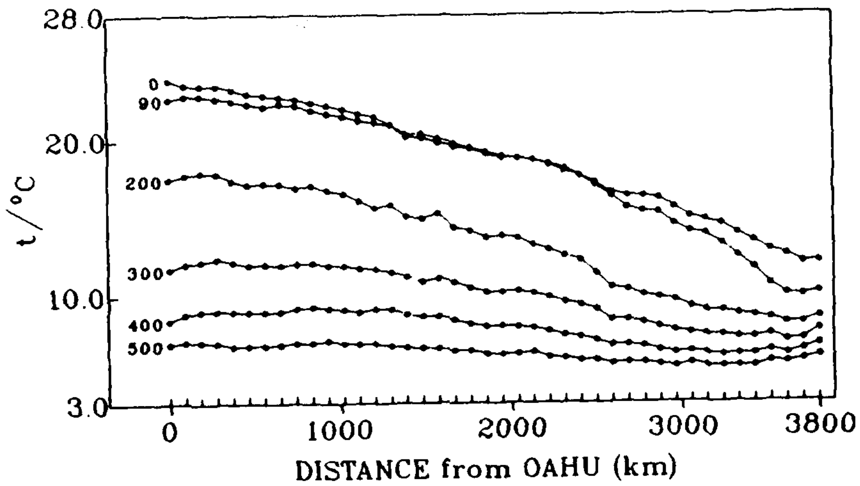
TEMPERATURE at various DEPTHS (meters)
12-YEAR MEAN



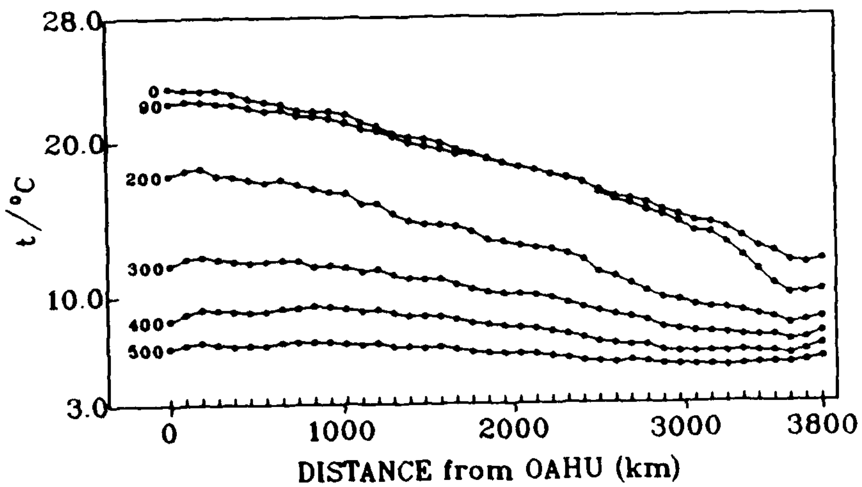
TEMPERATURE at various DEPTHS (meters)
JAN 1 MEAN



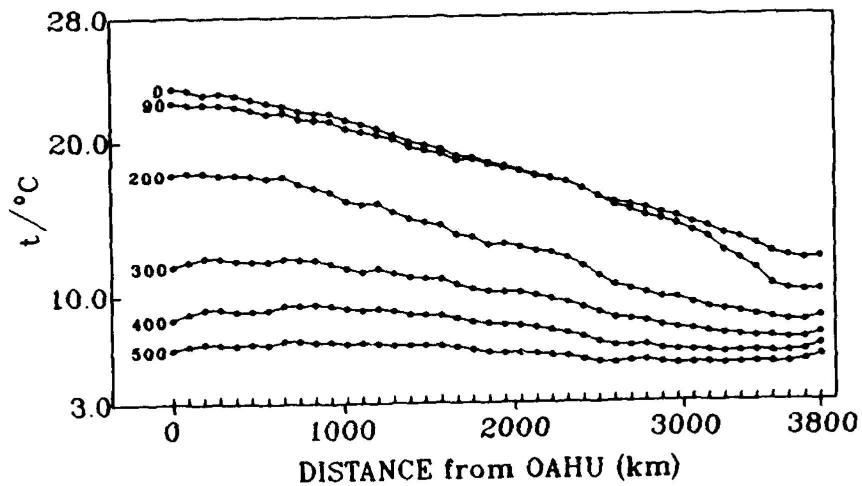
TEMPERATURE at various DEPTHS (meters)
JAN 15 MEAN



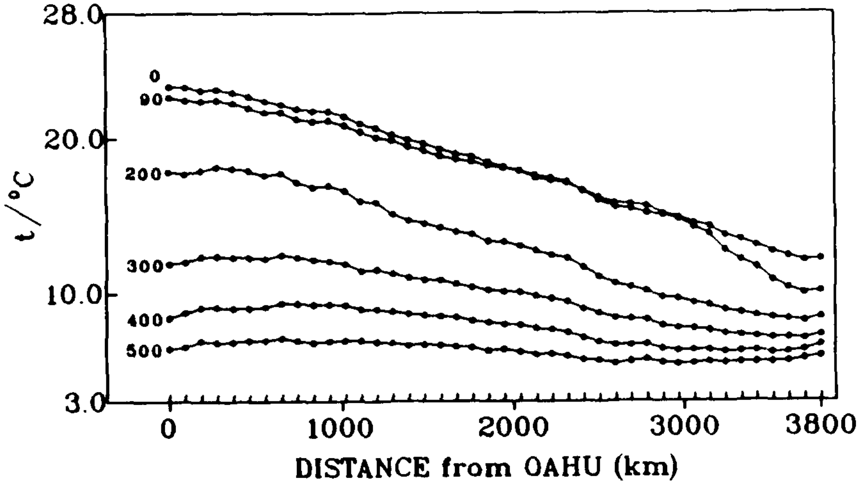
TEMPERATURE at various DEPTHS (meters)
FEB 1 MEAN



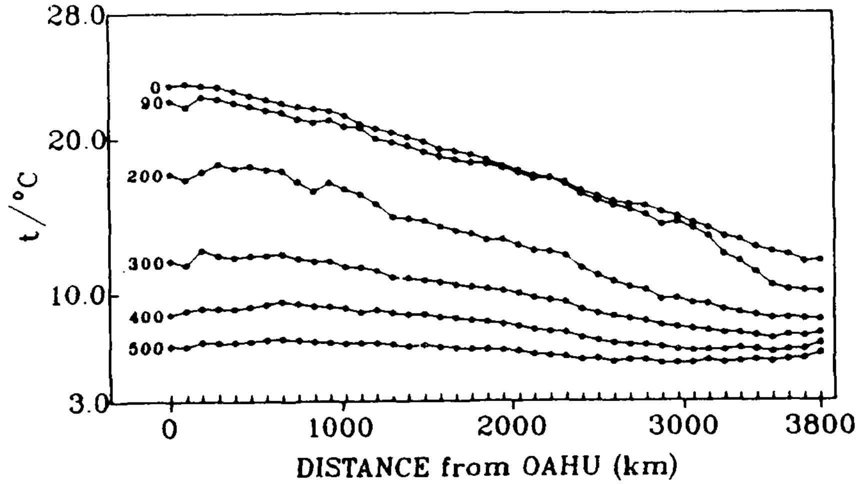
TEMPERATURE at various DEPTHS (meters)
FEB 15 MEAN



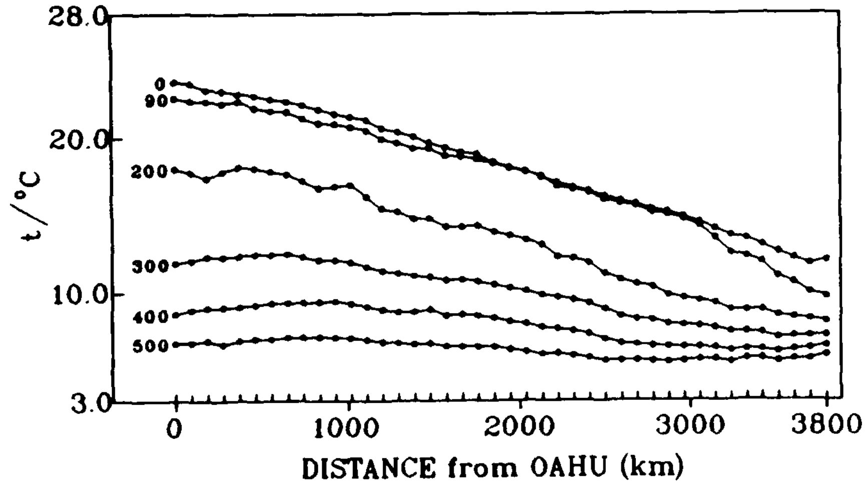
TEMPERATURE at various DEPTHS (meters)
MAR 1 MEAN



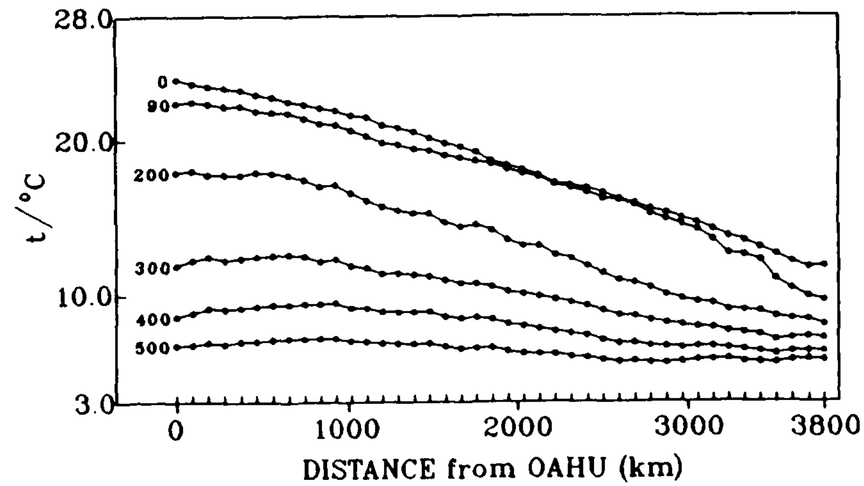
TEMPERATURE at various DEPTHS (meters)
MAR 15 MEAN



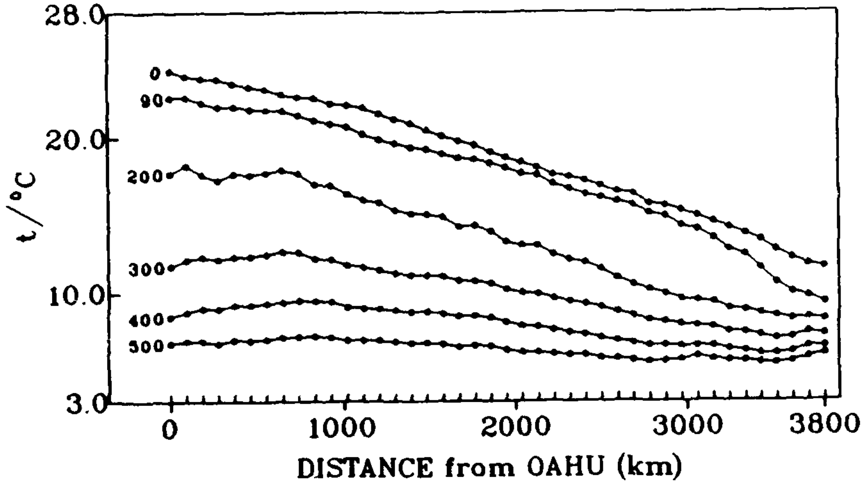
TEMPERATURE at various DEPTHS (meters)
APR 1 MEAN



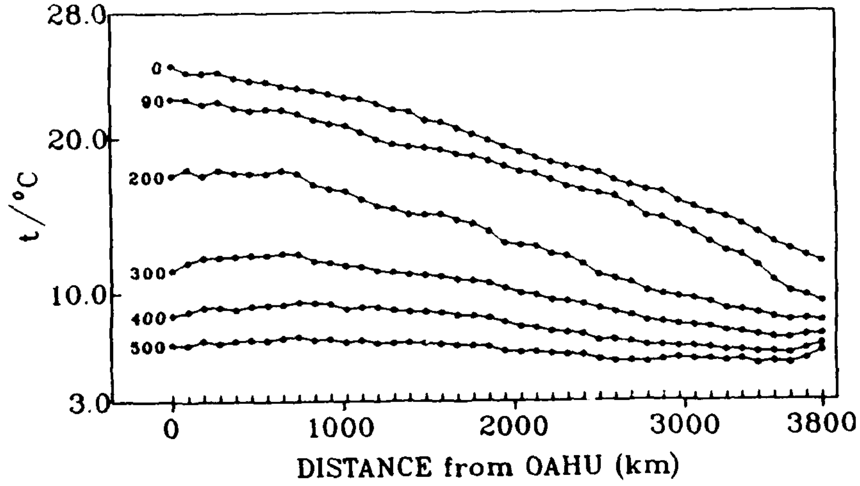
TEMPERATURE at various DEPTHS (meters)
APR 15 MEAN



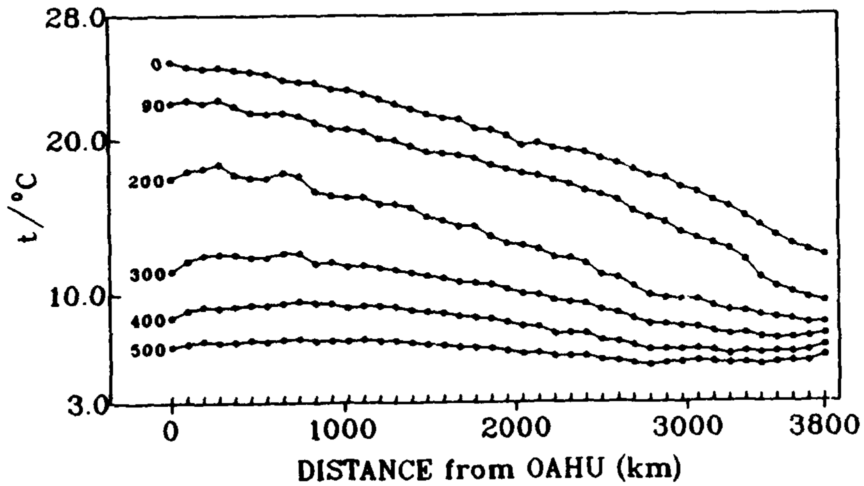
TEMPERATURE at various DEPTHS (meters)
MAY 1 MEAN



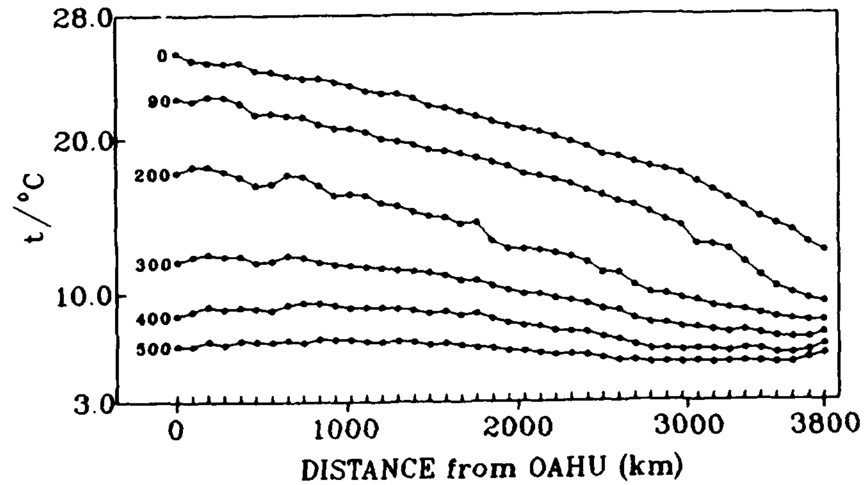
TEMPERATURE at various DEPTHS (meters)
MAY 15 MEAN

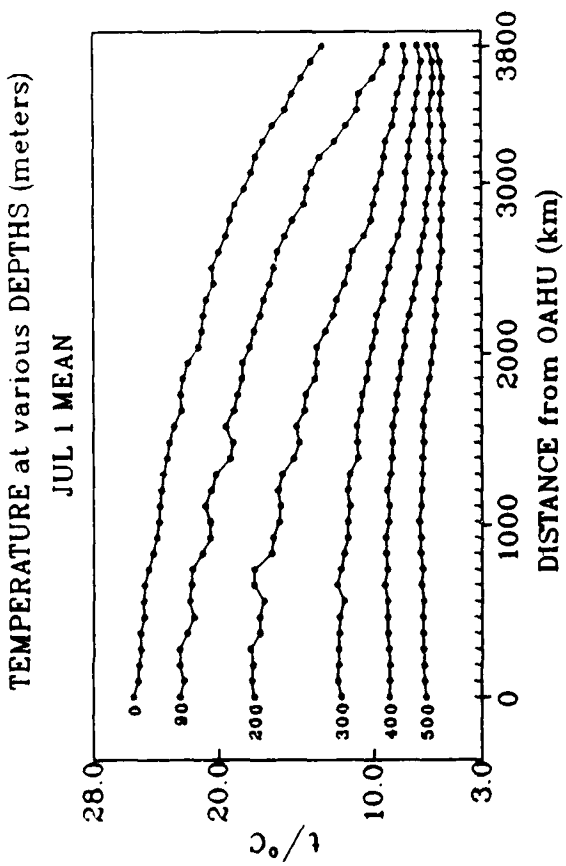


TEMPERATURE at various DEPTHS (meters)
JUN 1 MEAN



TEMPERATURE at various DEPTHS (meters)
JUN 15 MEAN




TEMPERATURE at various DEPTHS (meters)
JUL 1 MEAN
t/°C
28.0
20.0
10.0
3.0
0
90
200
300
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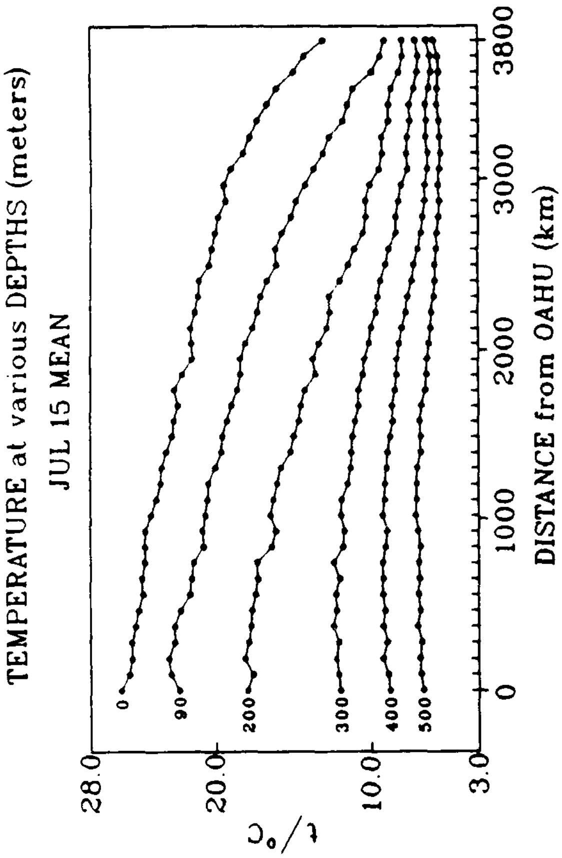
3800
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
JUL 15 MEAN
t/°C
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20.0
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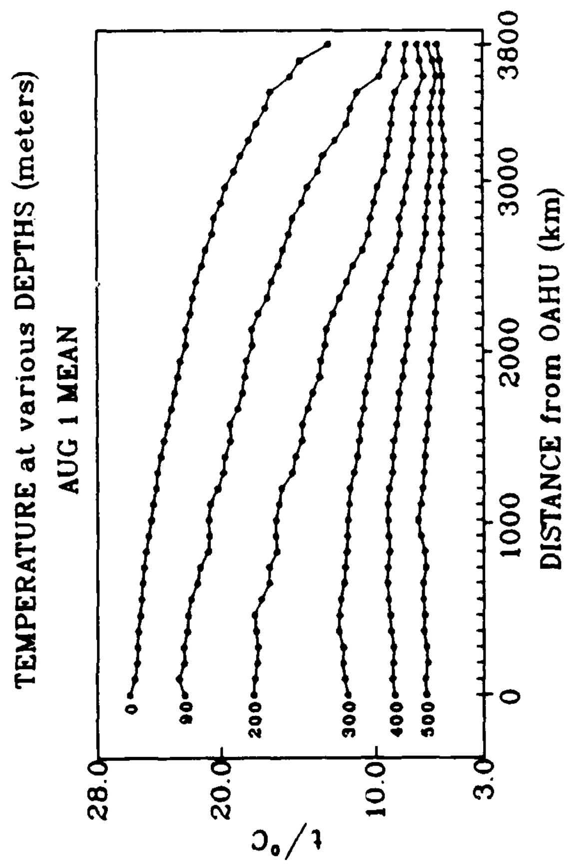
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
AUG 1 MEAN
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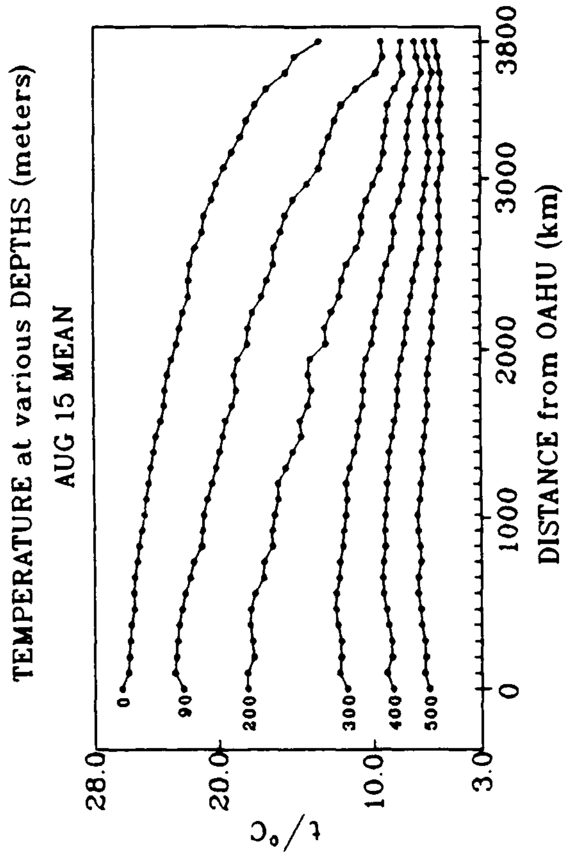
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
AUG 15 MEAN
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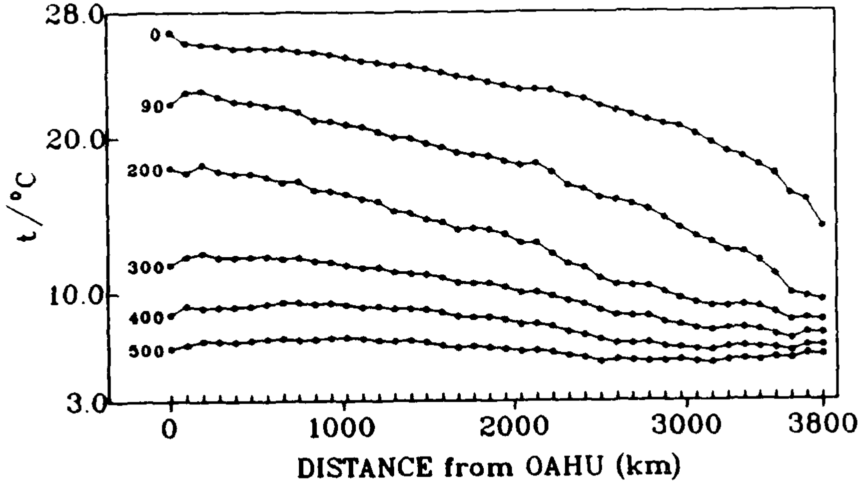
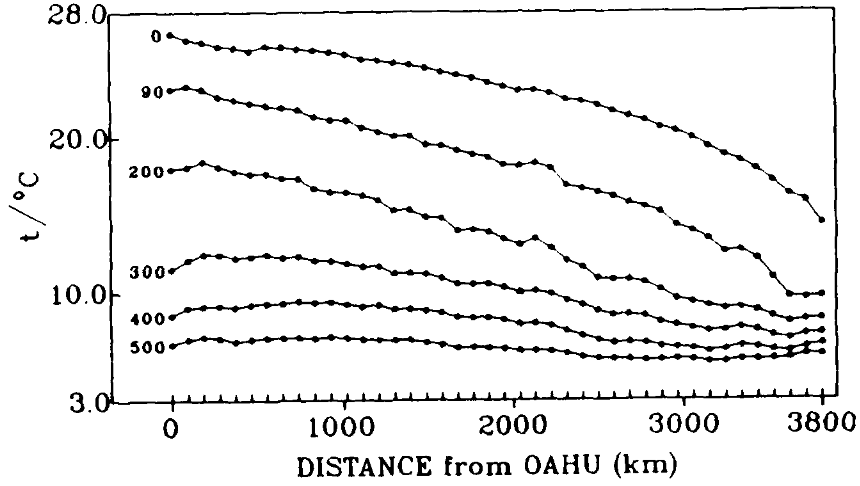
DISTANCE from OAHU (km)

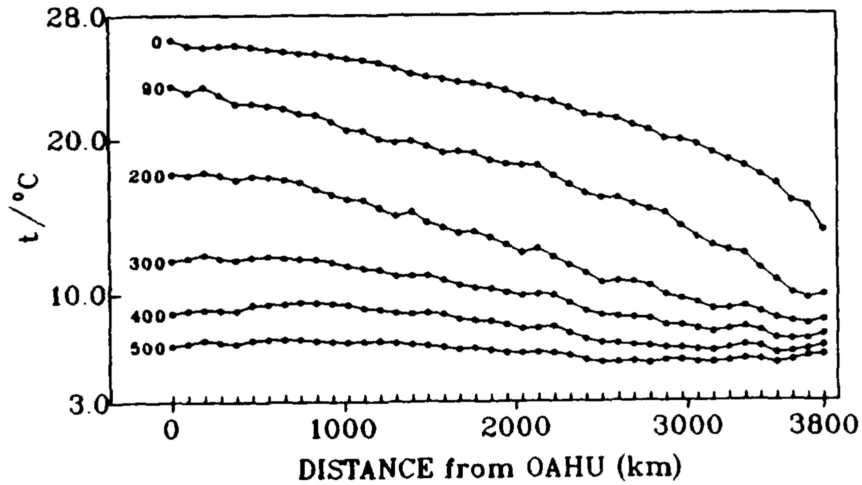
TEMPERATURE at various DEPTHS (meters)
SEP 1 MEAN



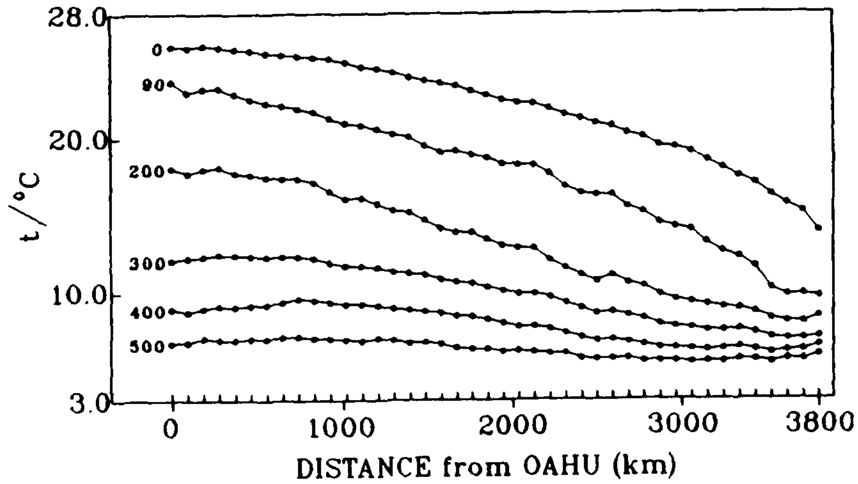
TEMPERATURE at various DEPTHS (meters)
SEP 15 MEAN

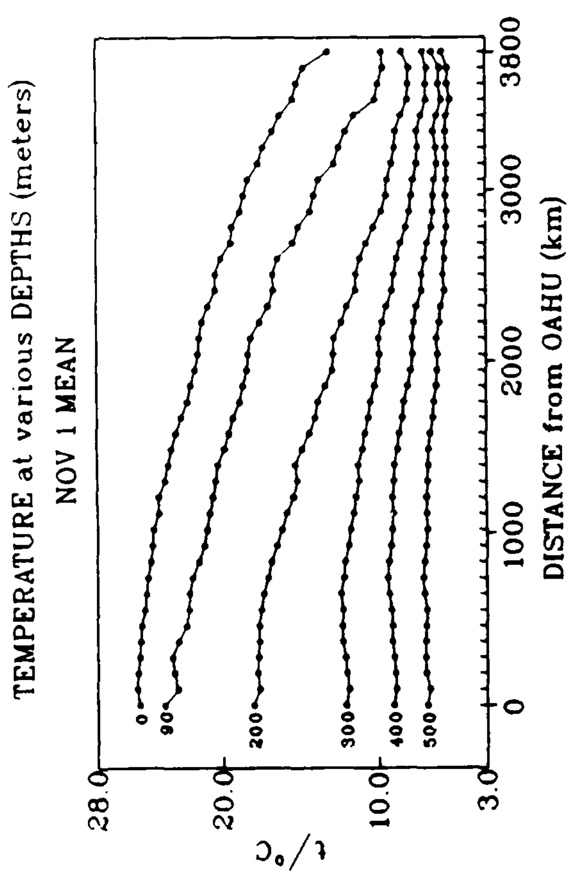


TEMPERATURE at various DEPTHS (meters)
OCT 1 MEAN



TEMPERATURE at various DEPTHS (meters)
OCT 15 MEAN




TEMPERATURE at various DEPTHS (meters)
NOV 1 MEAN
t/°C
28.0
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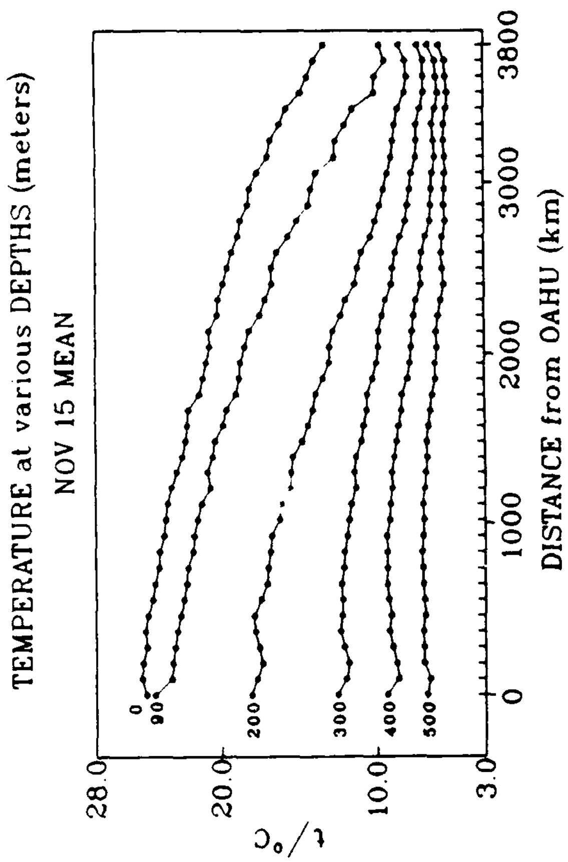
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
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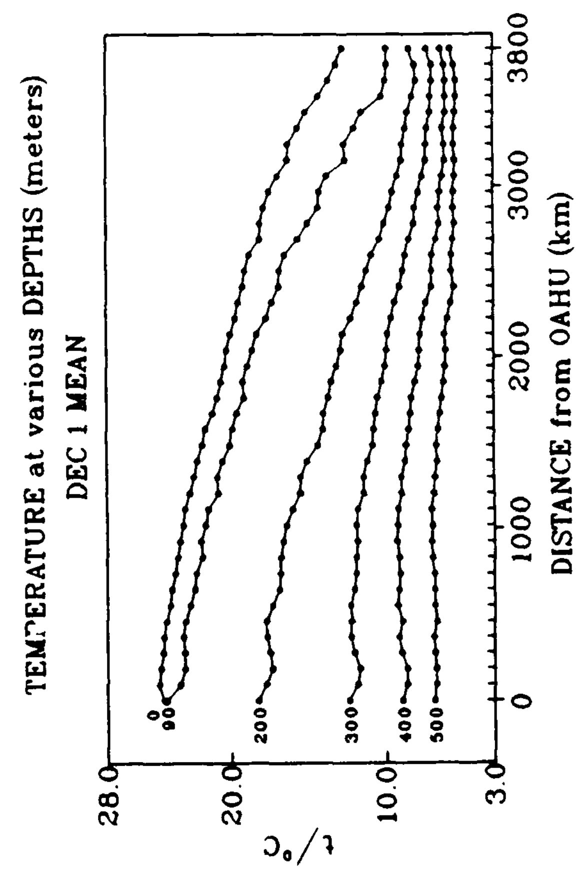
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
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t/°C
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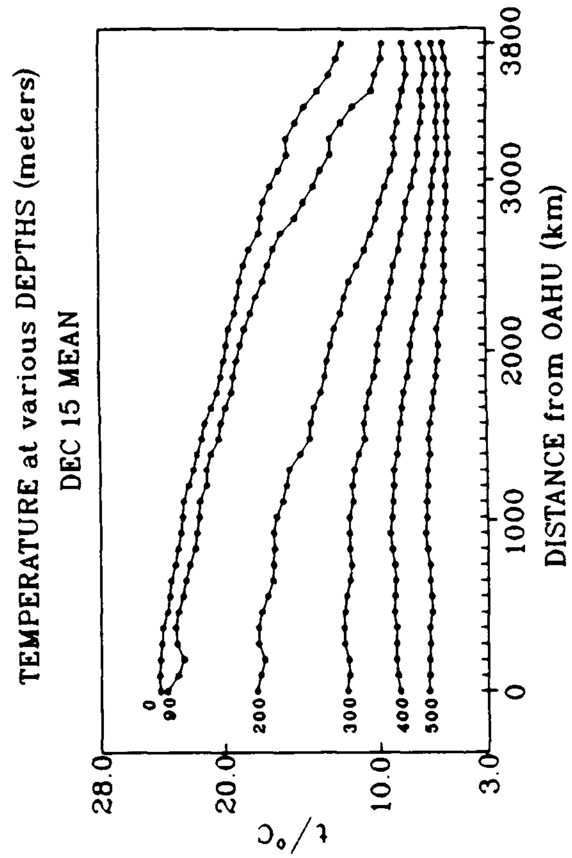
DISTANCE from OAHU (km)


TEMPERATURE at various DEPTHS (meters)
DEC 15 MEAN
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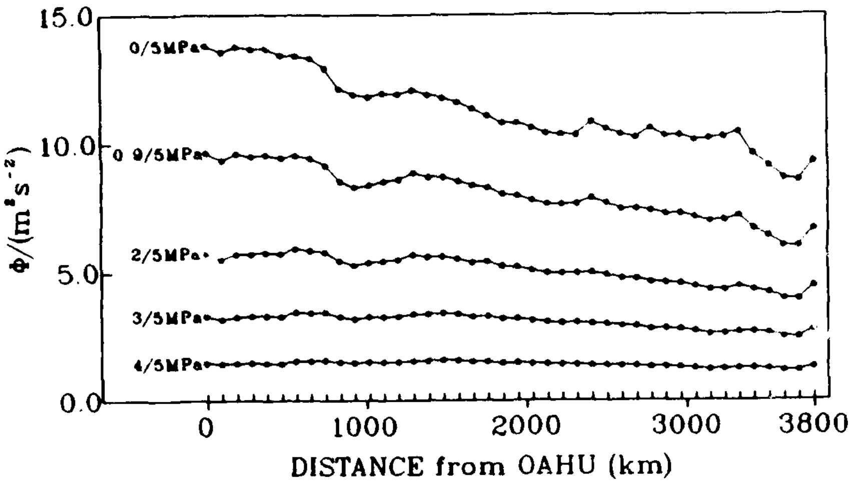
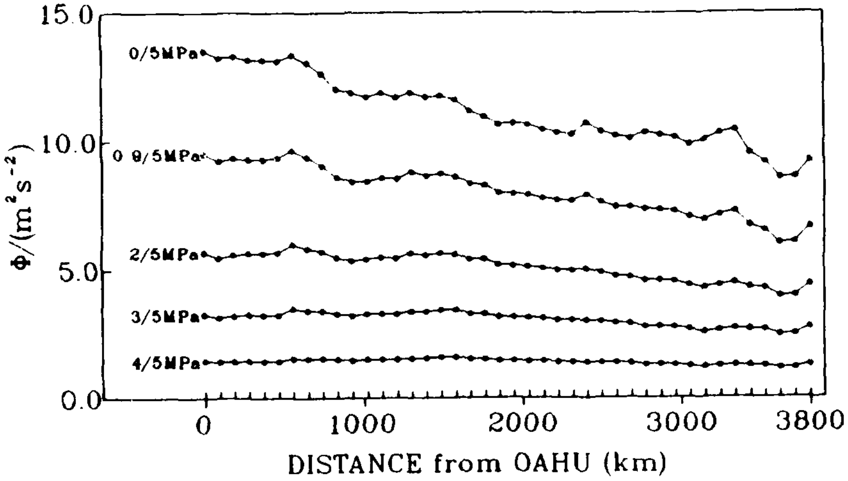
3800
DISTANCE from OAHU (km)

Geopotential Anomalies Relative to 5MPa,
The 12-Year Average over 1968 through 1979,
Averages over each Semi-month

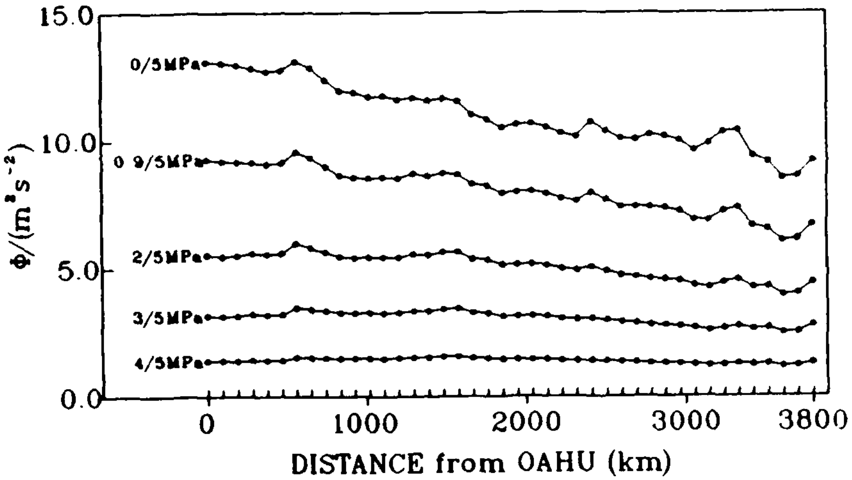
GEOPOTENTIAL ANOMALY
NOV 15, 1967



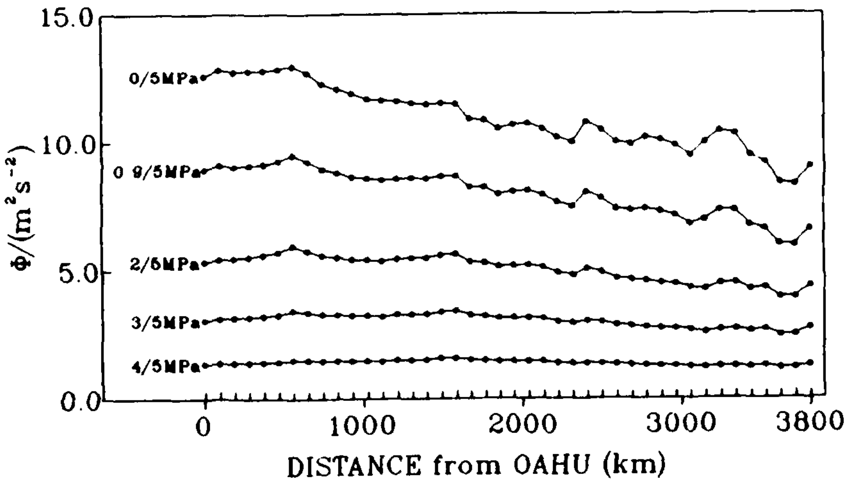
GEOPOTENTIAL ANOMALY
DEC 1, 1967



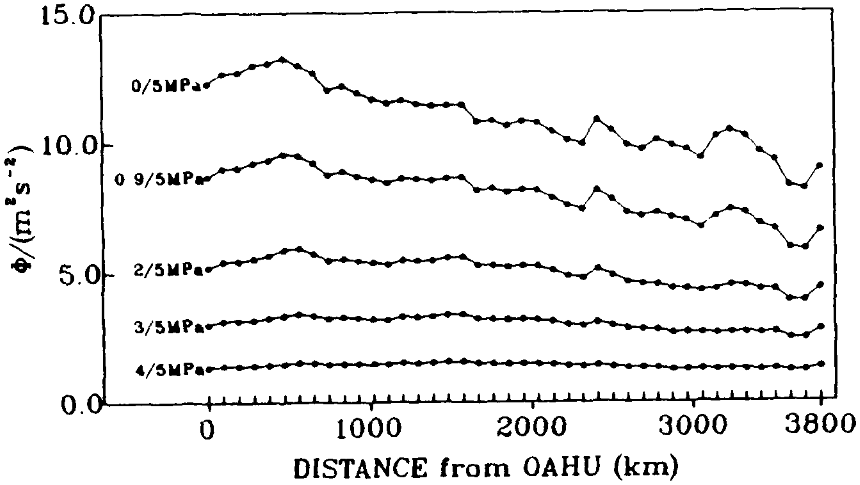
GEOPOTENTIAL ANOMALY
DEC 15, 1967



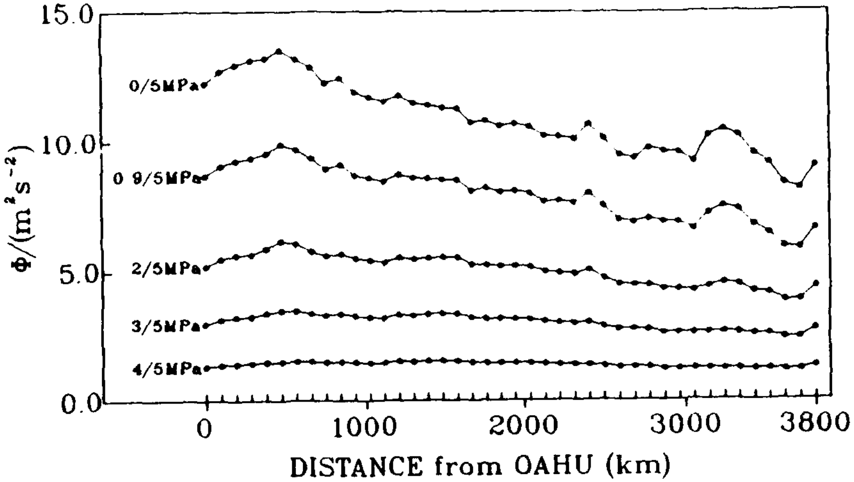
GEOPOTENTIAL ANOMALY
JAN 1, 1968



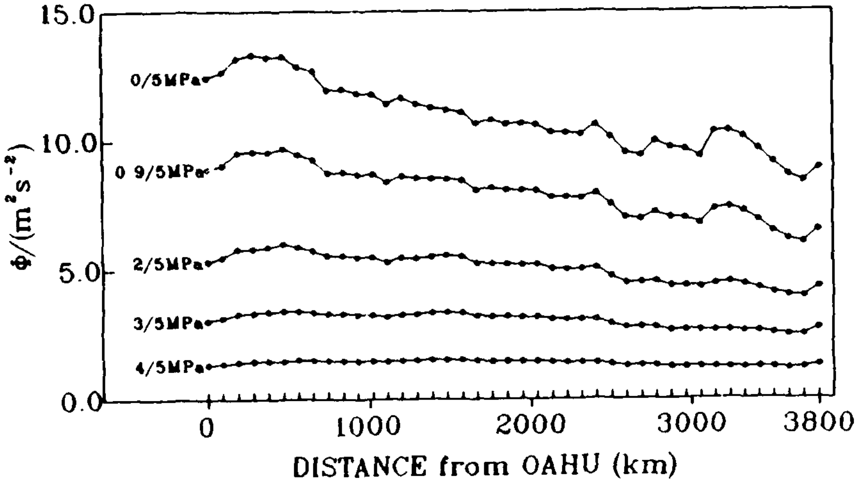
GEOPOTENTIAL ANOMALY
JAN 15, 1968



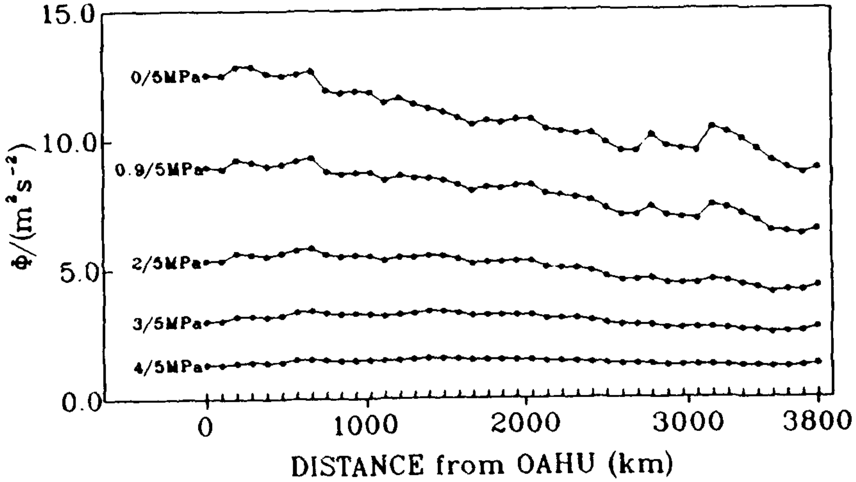
GEOPOTENTIAL ANOMALY
FEB 1, 1968



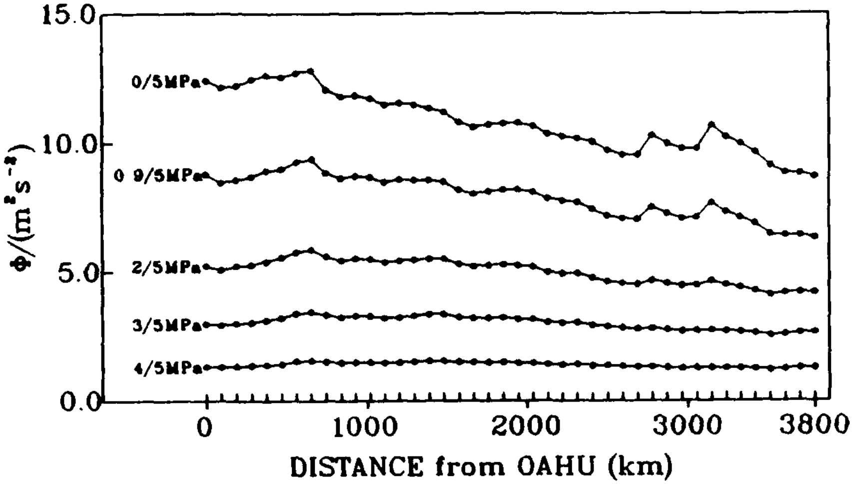
GEOPOTENTIAL ANOMALY
FEB 15, 1968



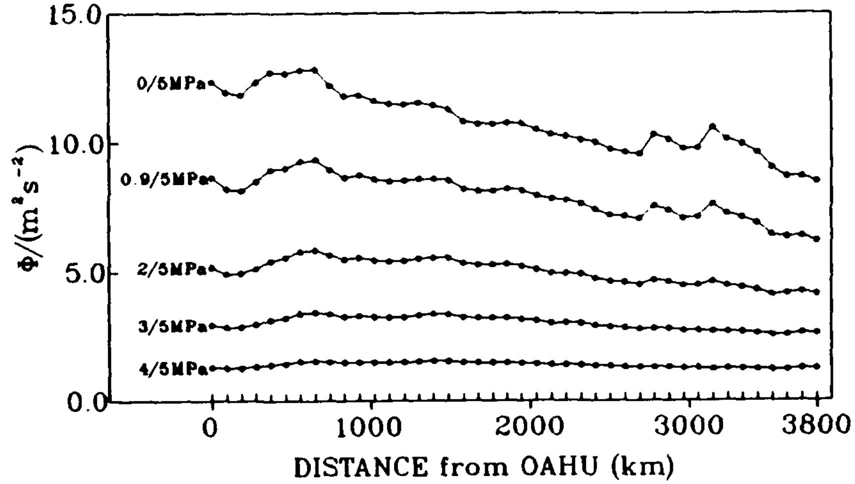
GEOPOTENTIAL ANOMALY
MAR 1, 1968



GEOPOTENTIAL ANOMALY
MAR 15, 1968



GEOPOTENTIAL ANOMALY
APR 1, 1968



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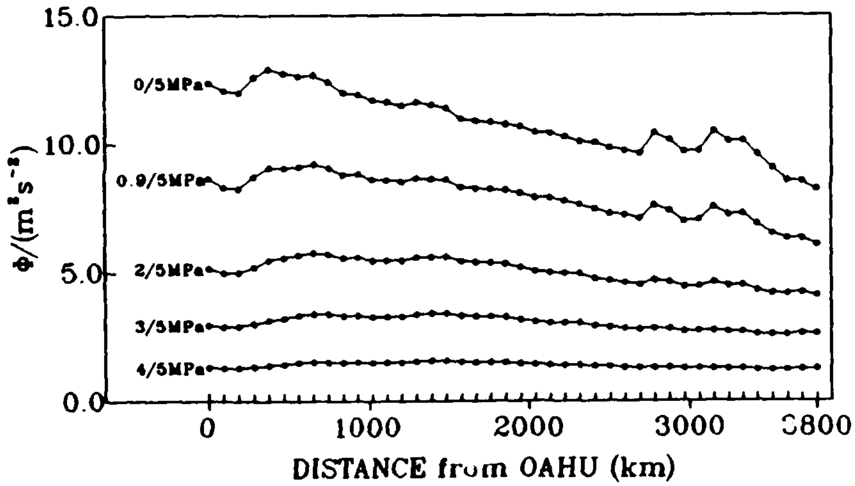
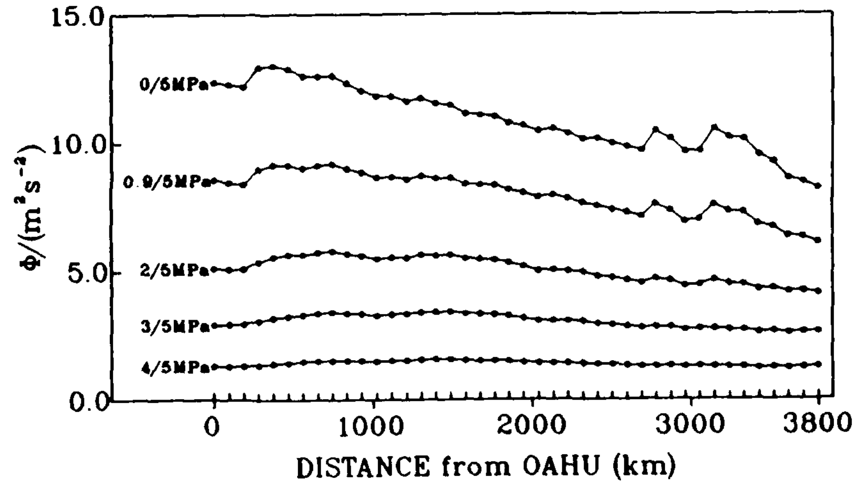
APR 15, 1968



GEOPOTENTIAL ANOMALY
MAY 1, 1968



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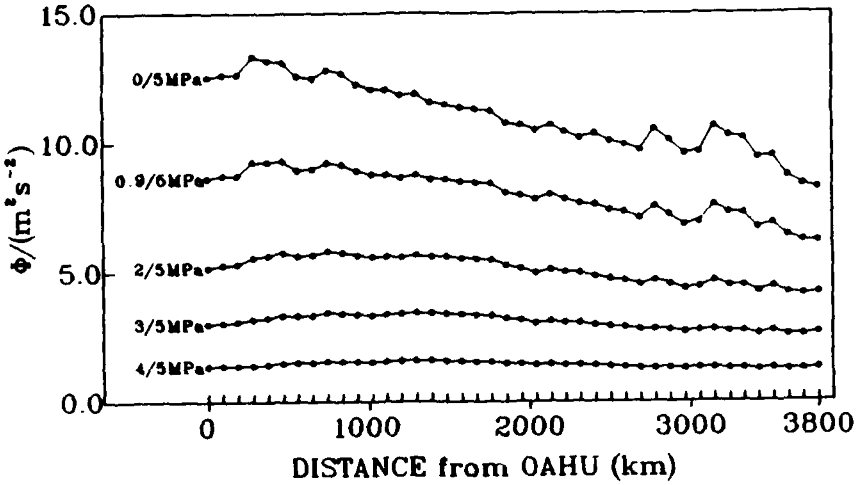
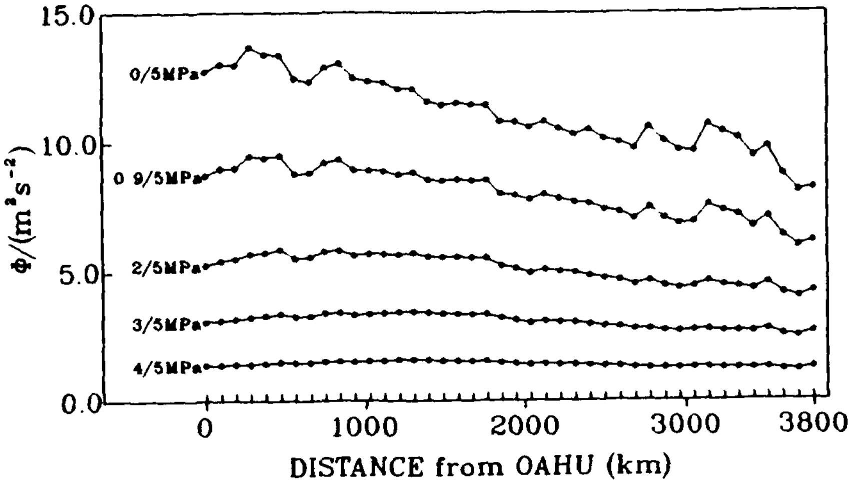


GEOPOTENTIAL ANOMALY
JUN 1, 1968



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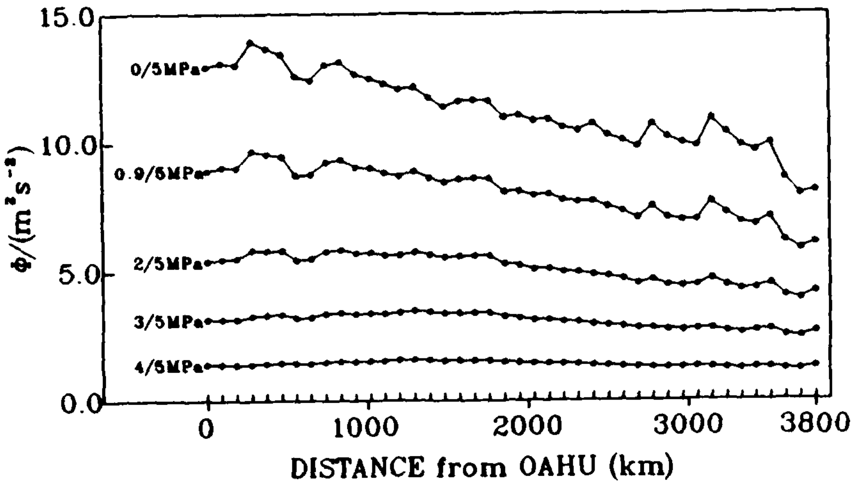
JUN 15, 1968



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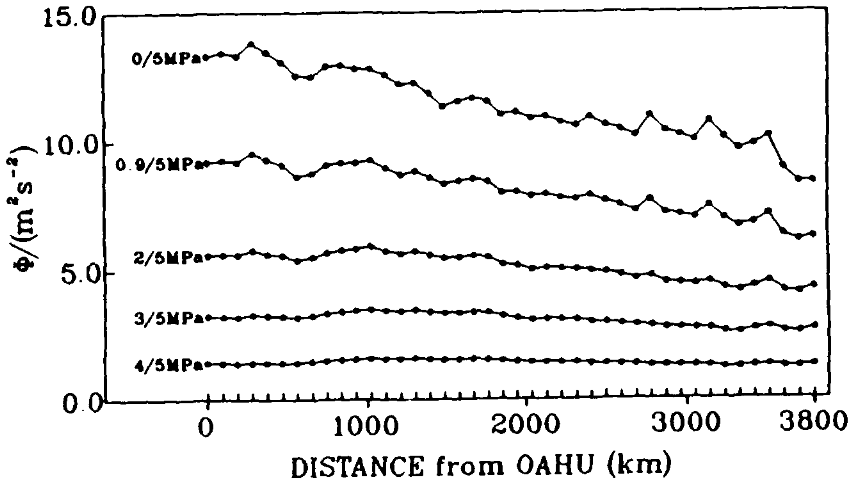
JUL 1, 1968



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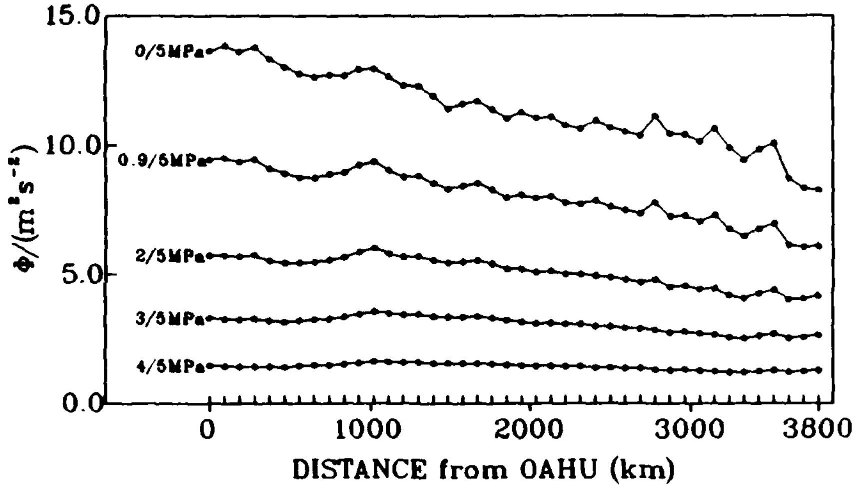
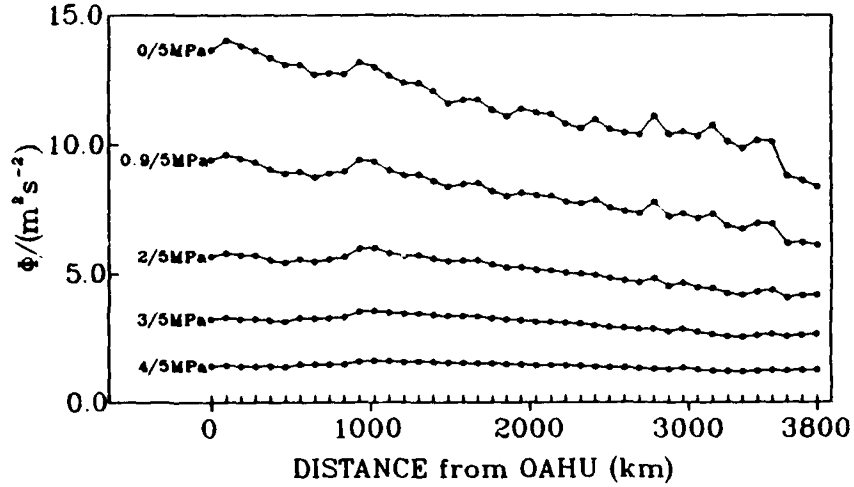


GEOPOTENTIAL ANOMALY
AUG 1, 1968



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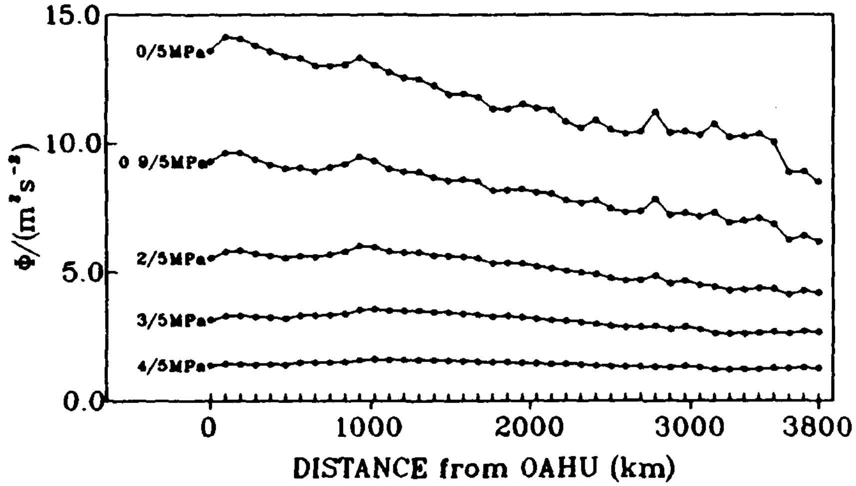
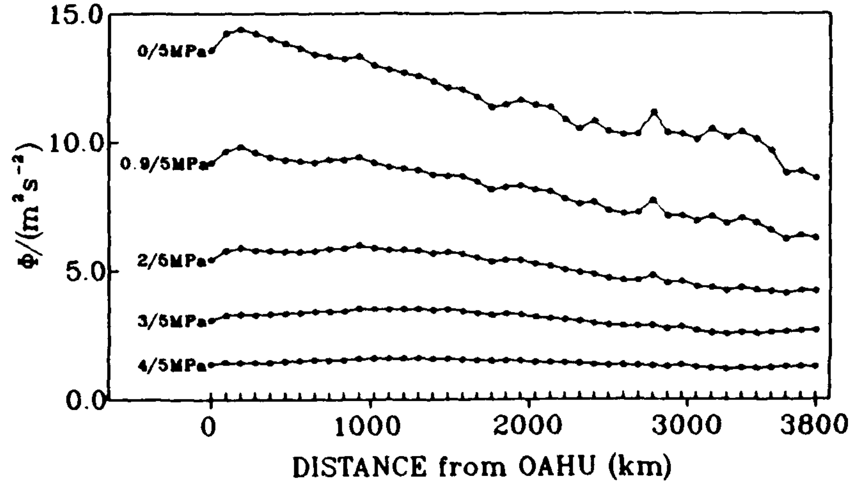
AUG 15, 1968



GEOPOTENTIAL ANOMALY
SEP 1, 1968



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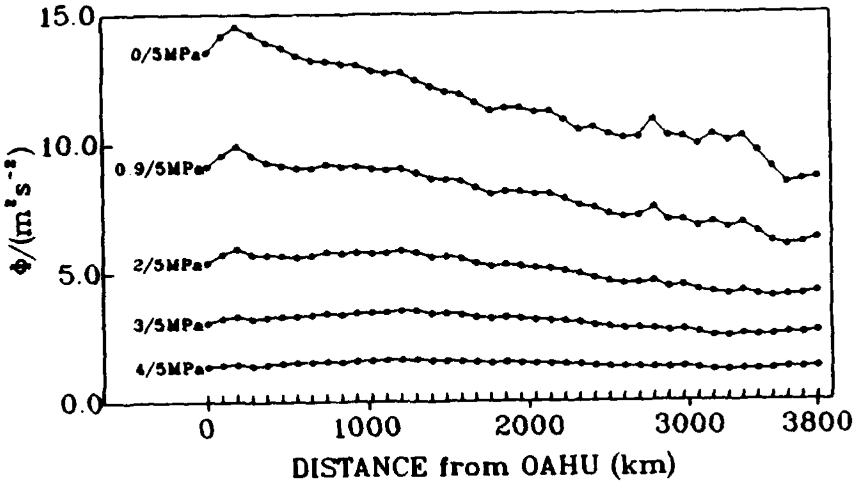
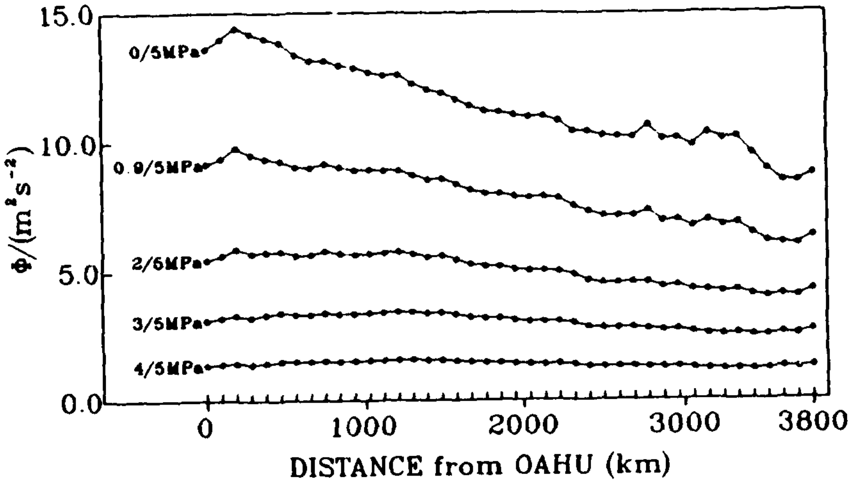
SEP 15, 1968



GEOPOTENTIAL ANOMALY
OCT 1, 1968



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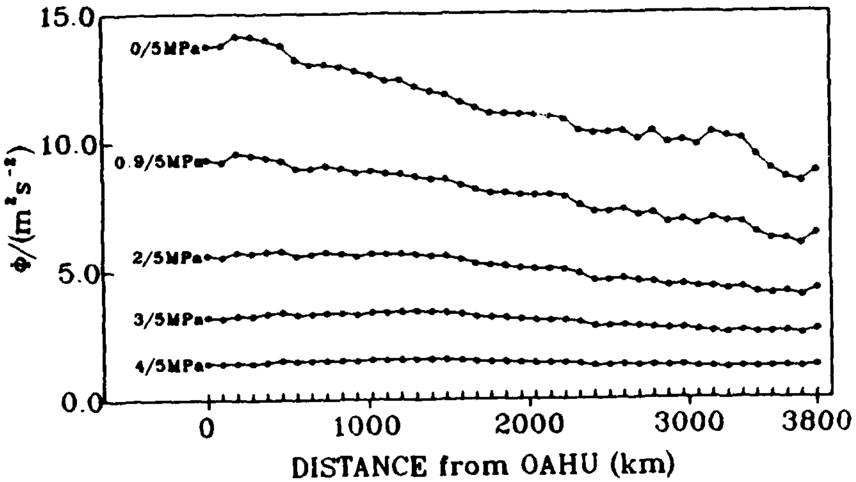
OCT 15, 1968



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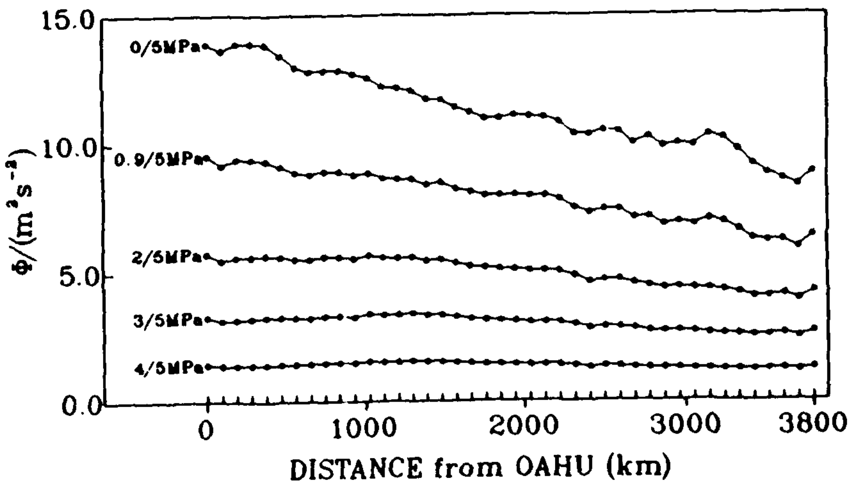
NOV 1, 1968



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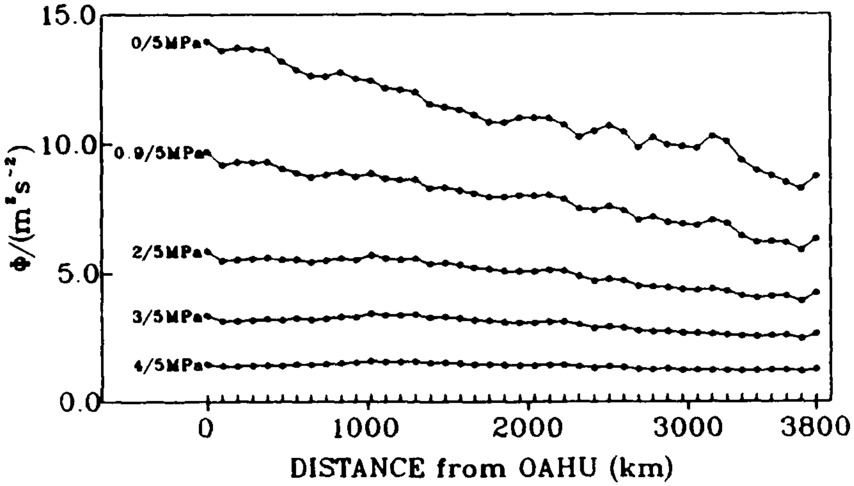

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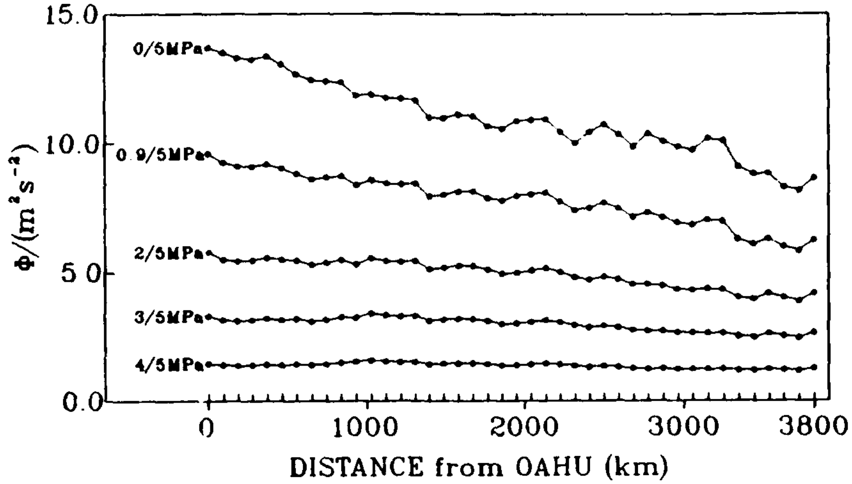
DEC 1, 1968



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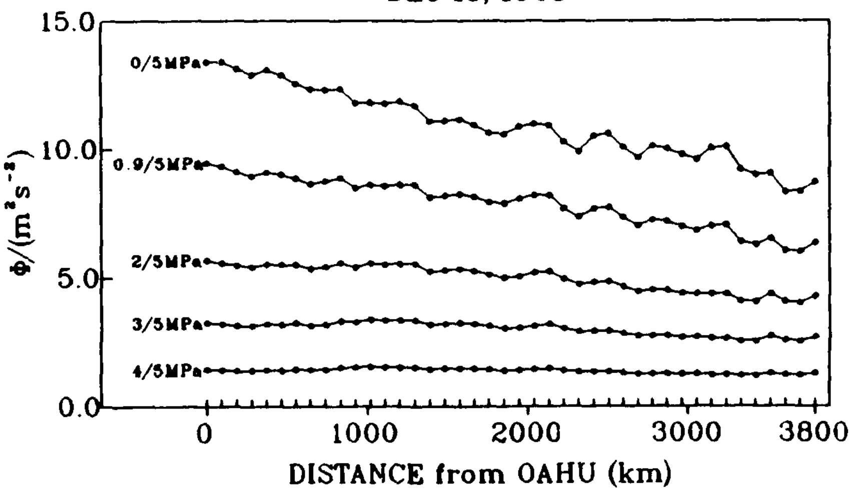
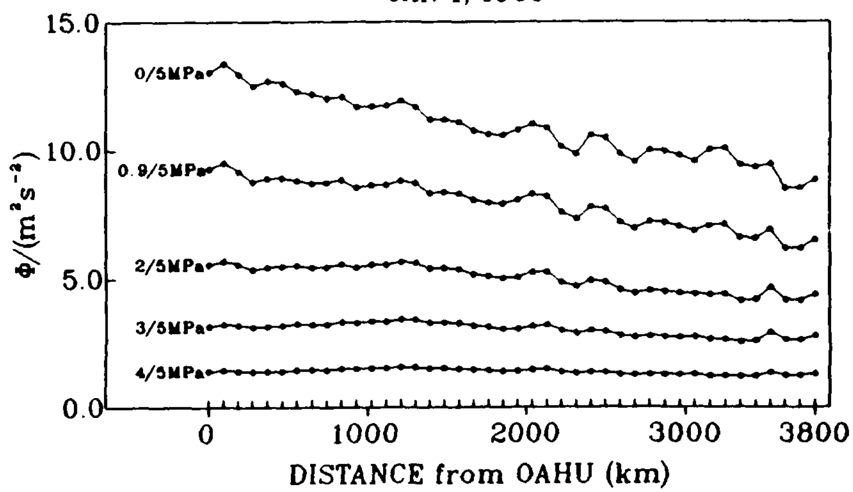
DEC 15, 1968



GEOPOTENTIAL ANOMALY
JAN 1, 1969



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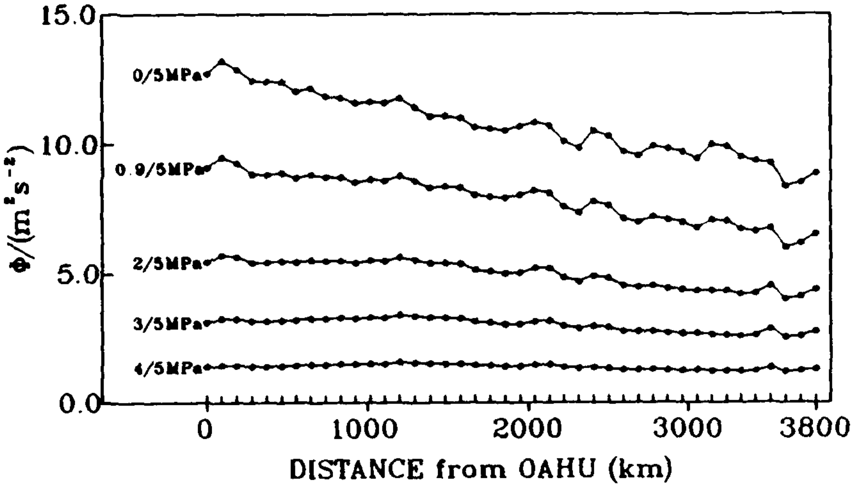
JAN 15, 1969



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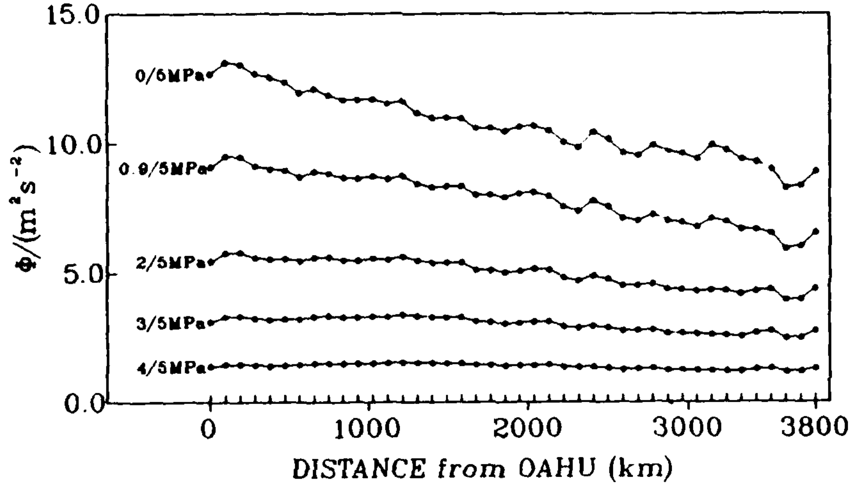
FEB 1, 1969



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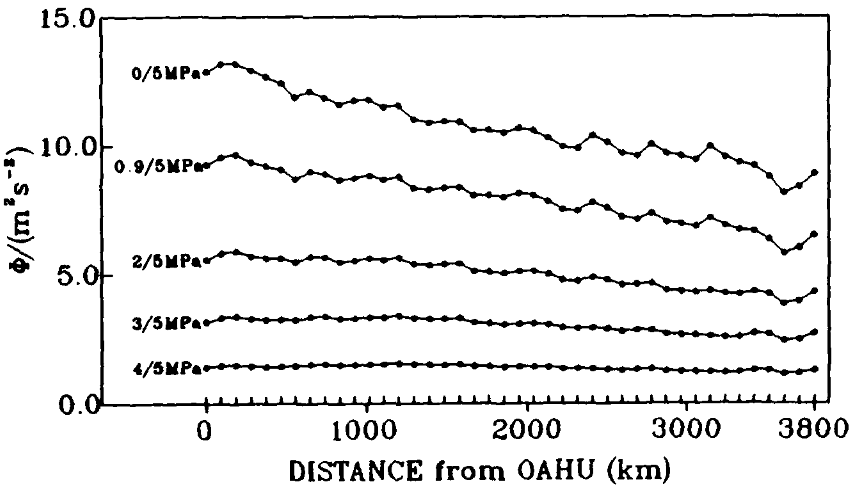
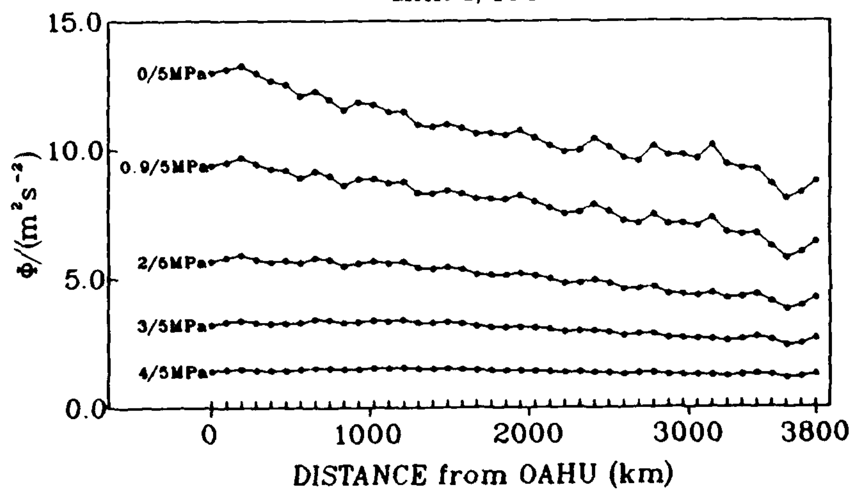
FEB 15, 1969



GEOPOTENTIAL ANOMALY
MAR 1, 1969



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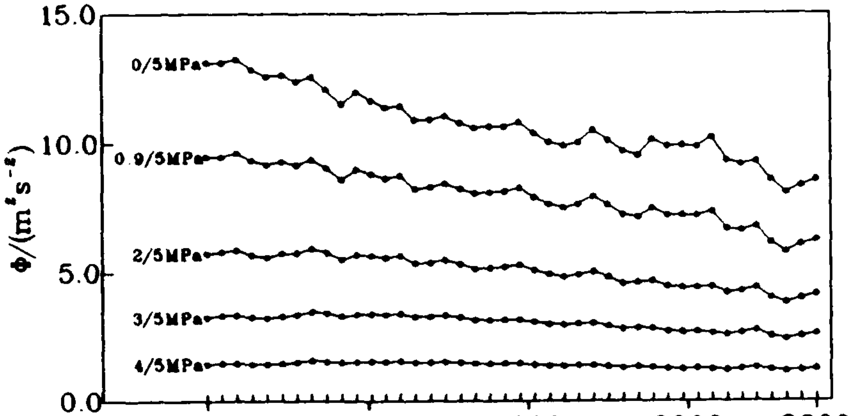

GEOPOTENTIAL ANOMALY
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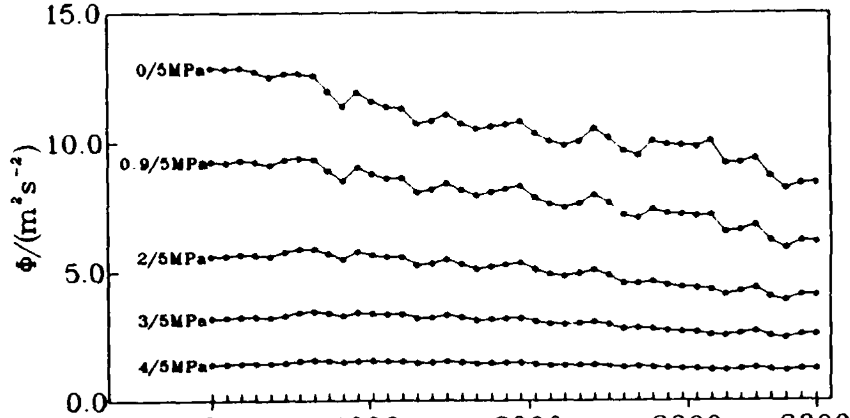

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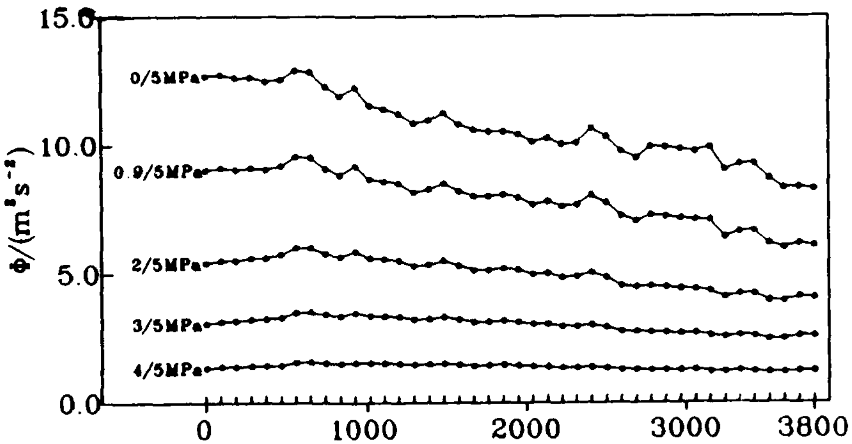

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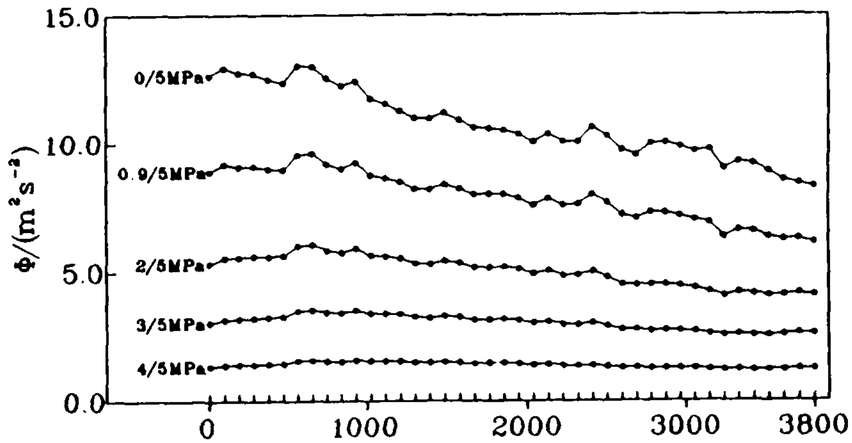
MAY 1, 1969



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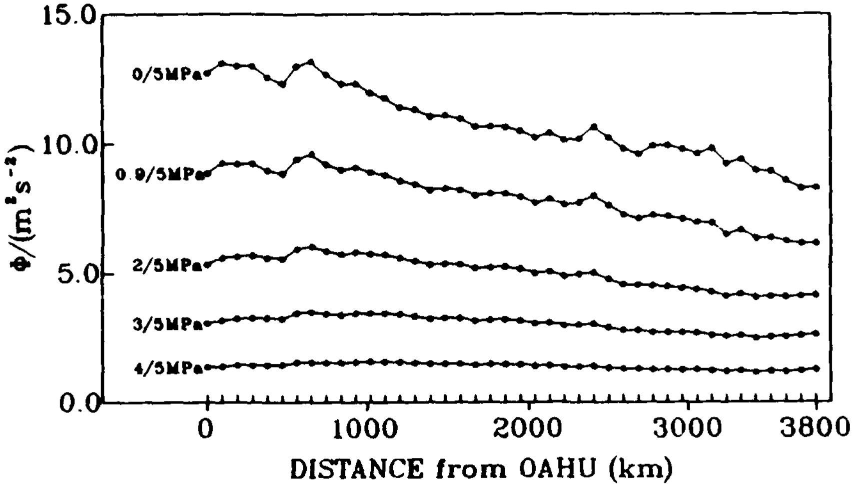

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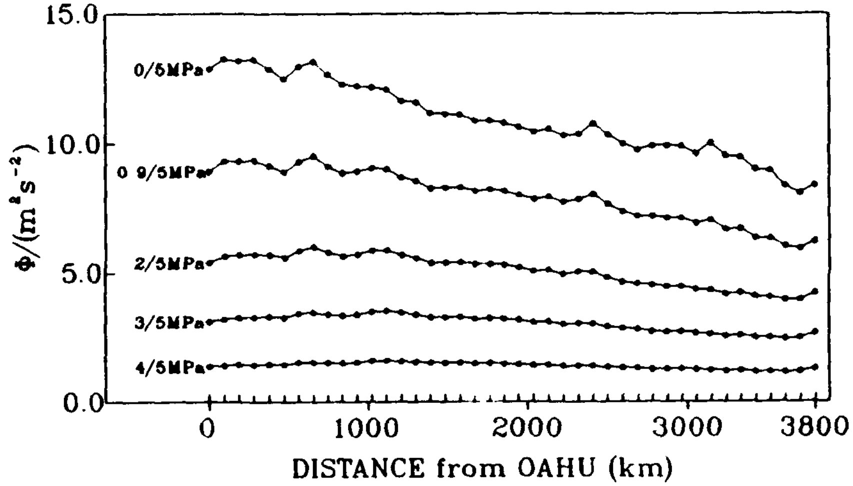

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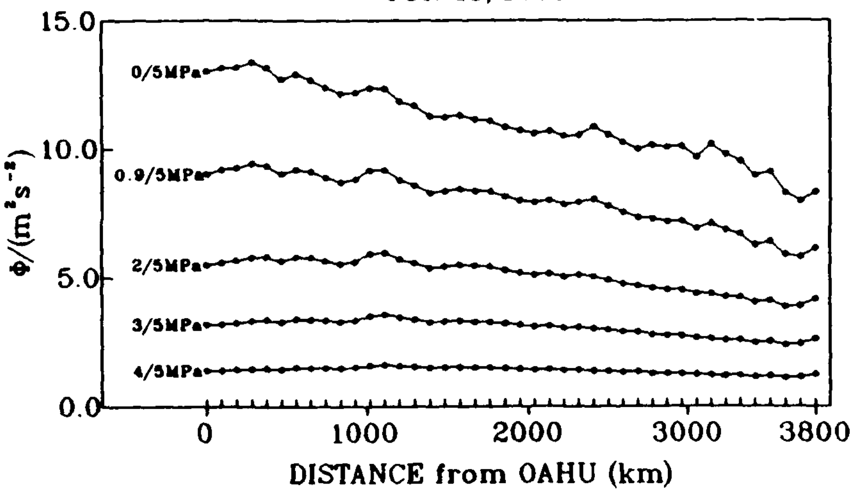

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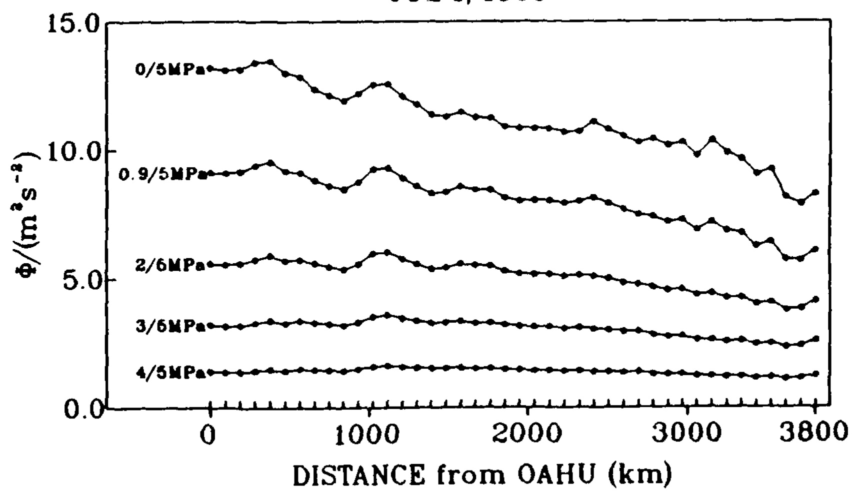

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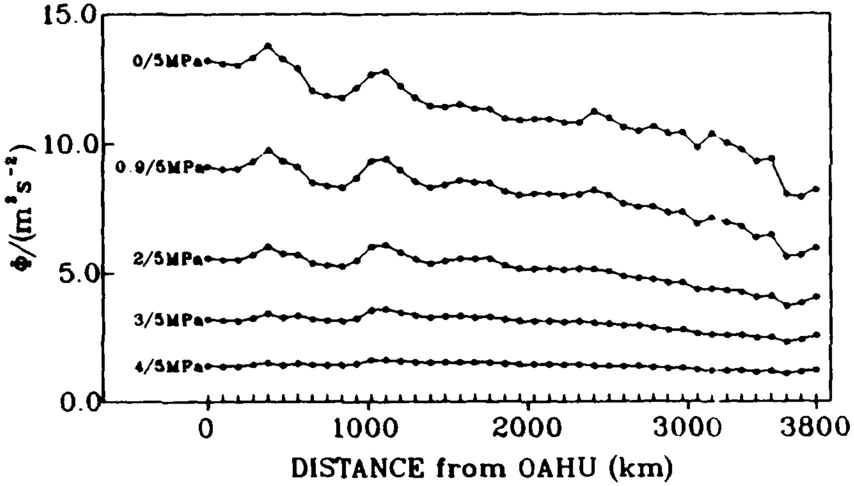
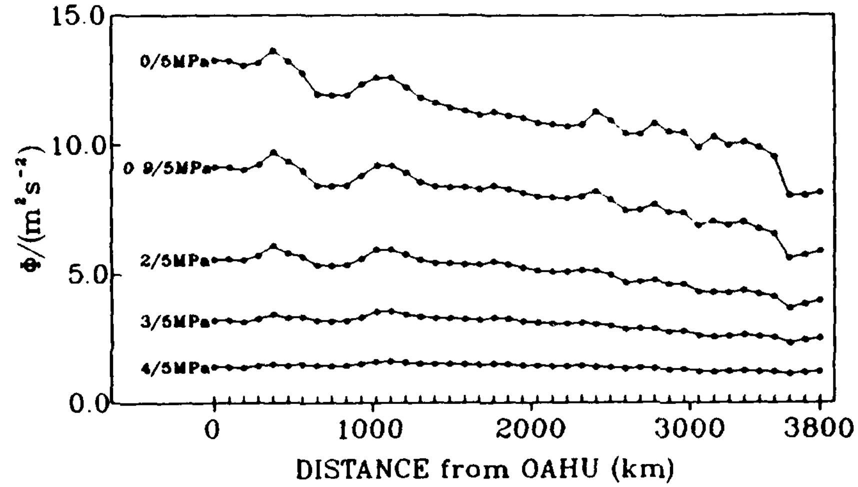


GEOPOTENTIAL ANOMALY
AUG 1, 1969



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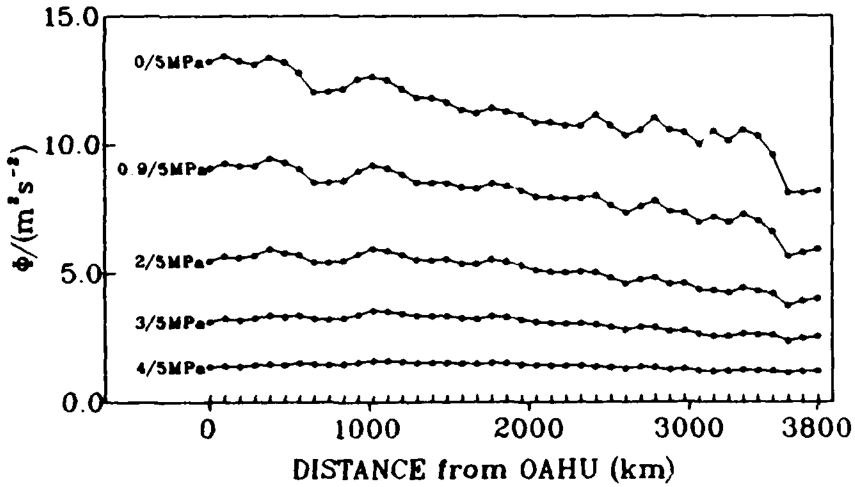
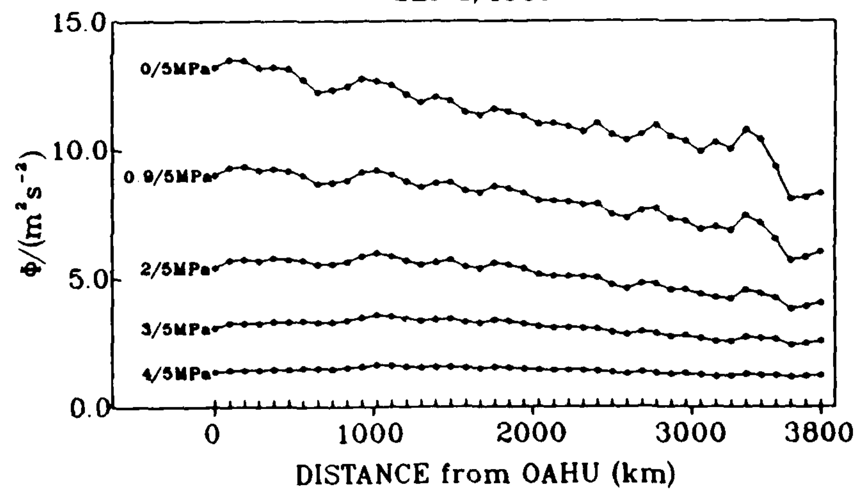
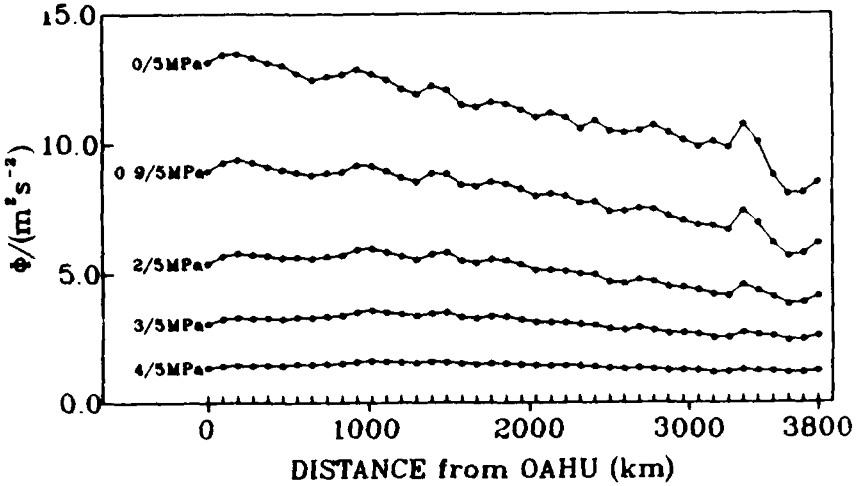


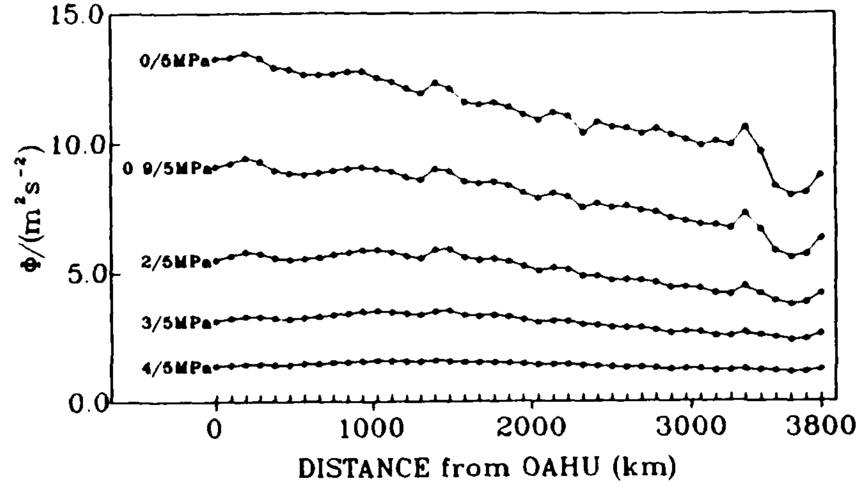
GEOPOTENTIAL ANOMALY
SEP 1, 1969



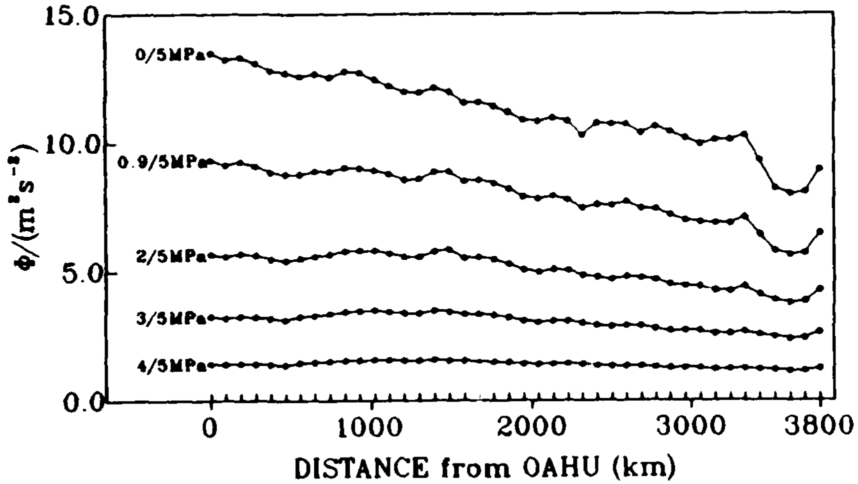
GEOPOTENTIAL ANOMALY
SEP 15, 1969



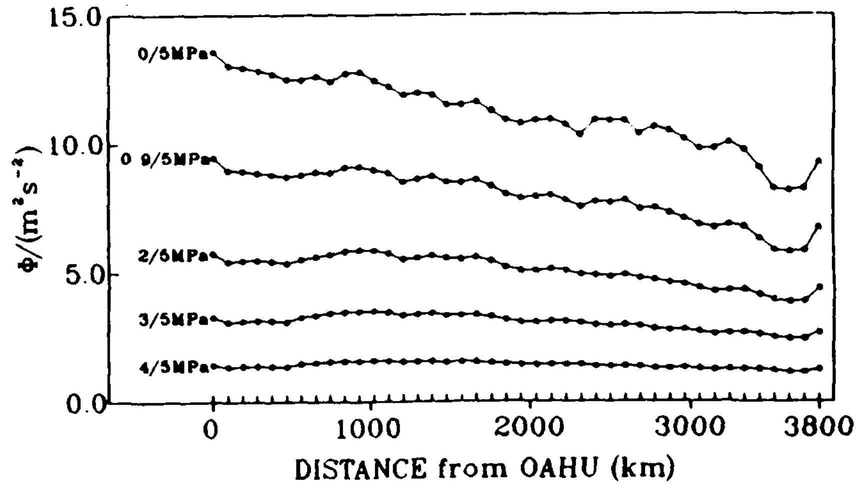
GEOPOTENTIAL ANOMALY
OCT 1, 1969



GEOPOTENTIAL ANOMALY
OCT 15, 1969



GEOPOTENTIAL ANOMALY
NOV 1, 1969



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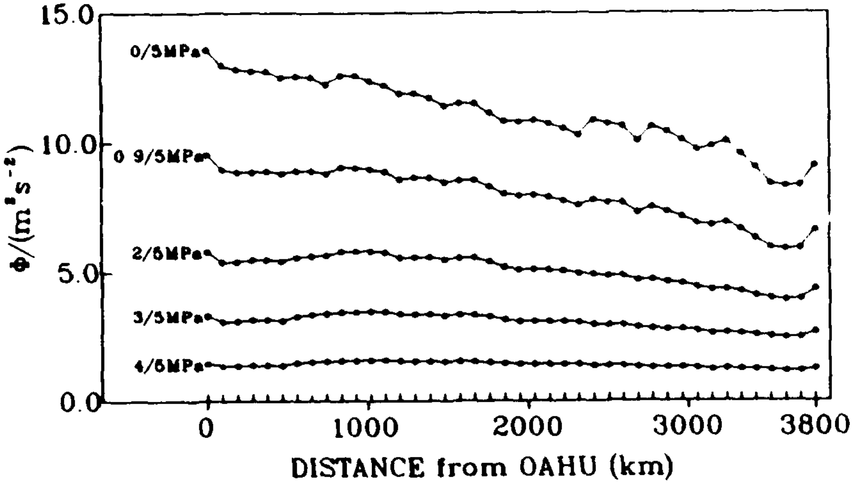

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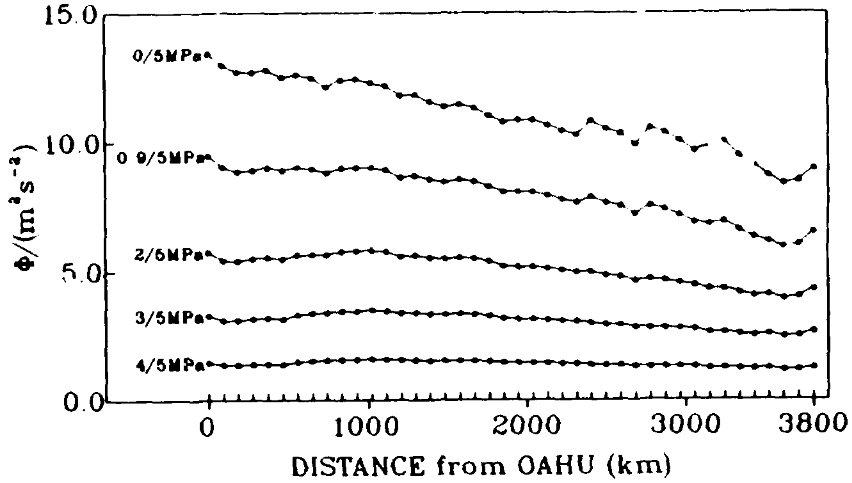
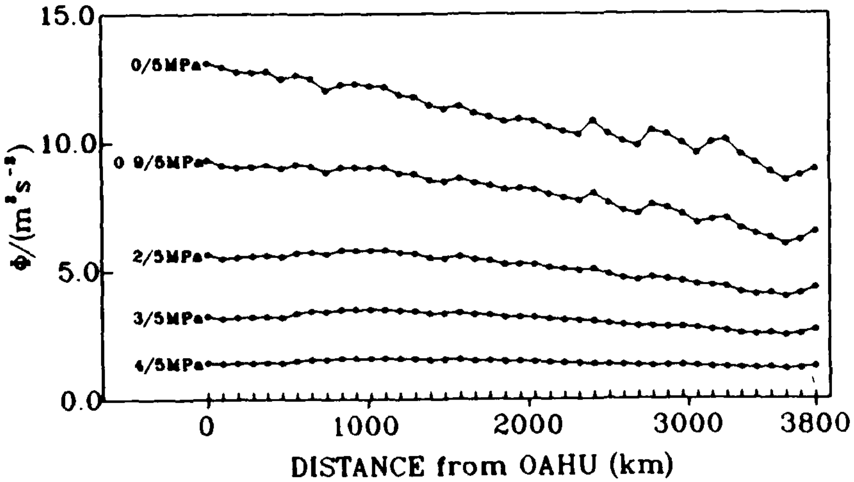
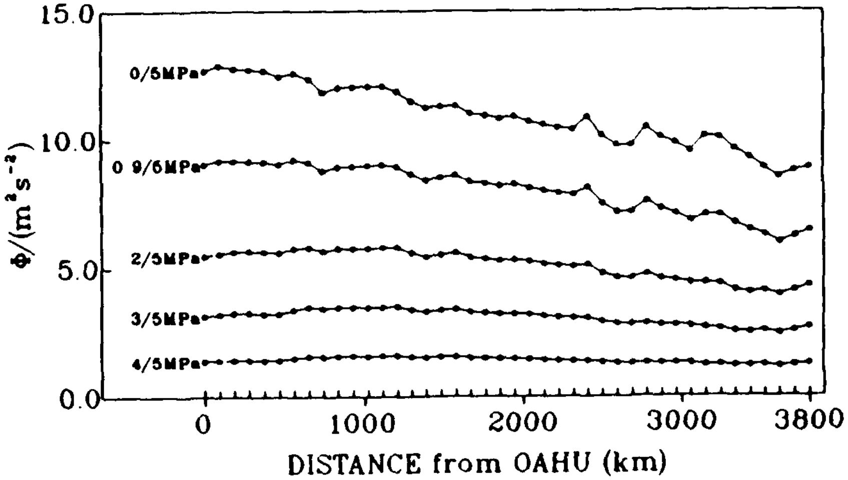
DEC 1, 1969

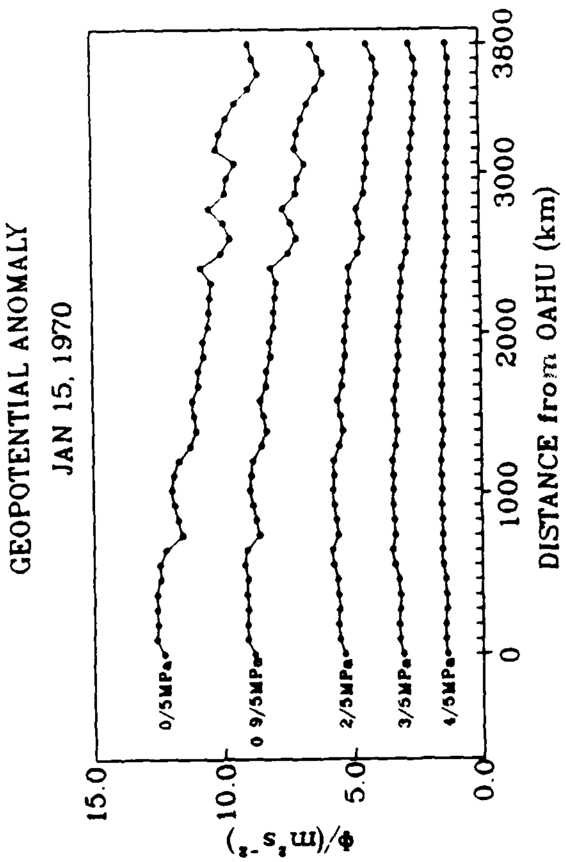


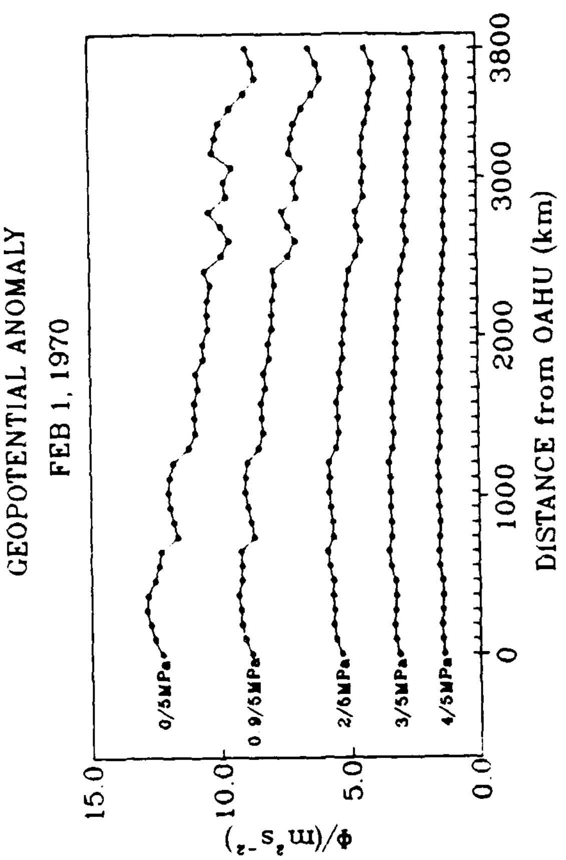
GEOPOTENTIAL ANOMALY
DEC 15, 1969

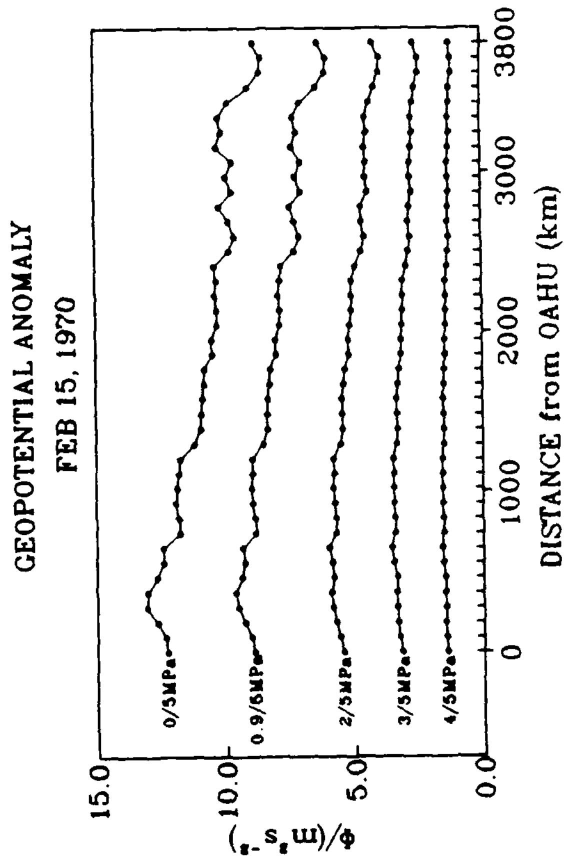


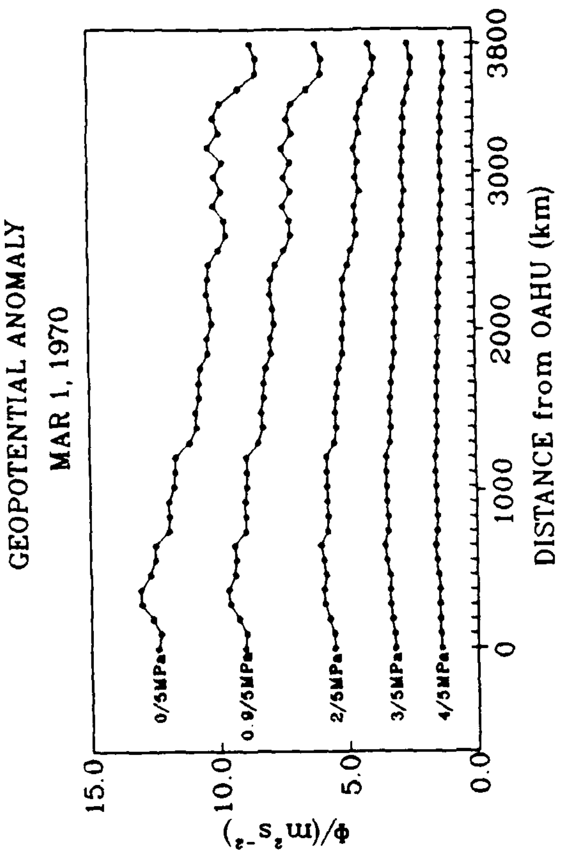
GEOPOTENTIAL ANOMALY
JAN 1, 1970




GEOPOTENTIAL ANOMALY
JAN 15, 1970
$\phi/(m^2 s^{-2})$
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 1, 1970
$\phi/(m^2 s^{-2})$
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 15, 1970
$\phi/(m^2 s^{-2})$
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAR 1, 1970
$\phi/(m^2 s^{-2})$
15.0
10.0
5.0
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0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
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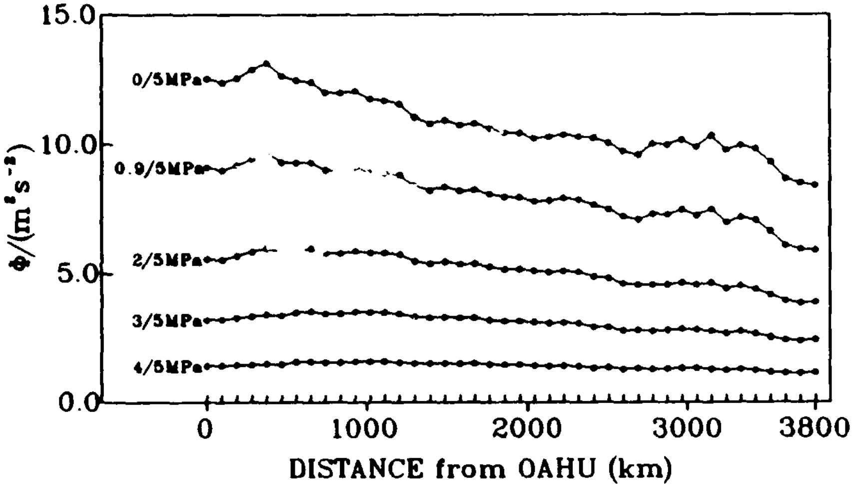
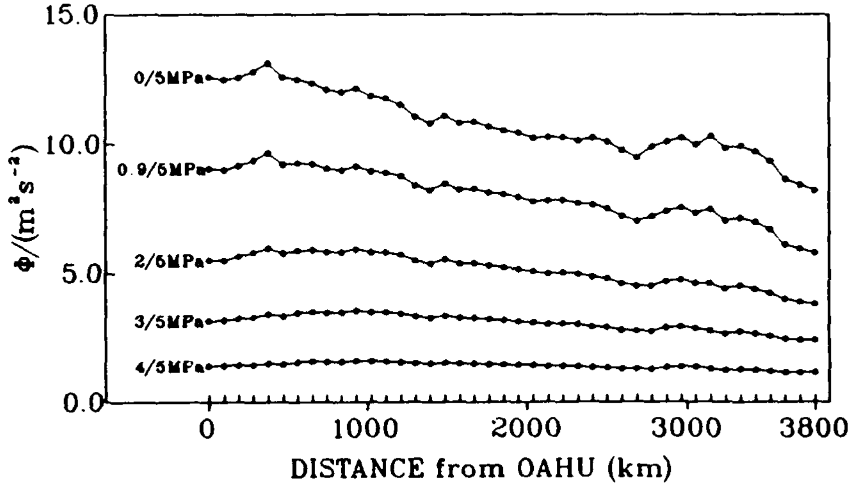
2000
3000
3800
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
MAR 15, 1970



GEOPOTENTIAL ANOMALY
APR 1, 1970



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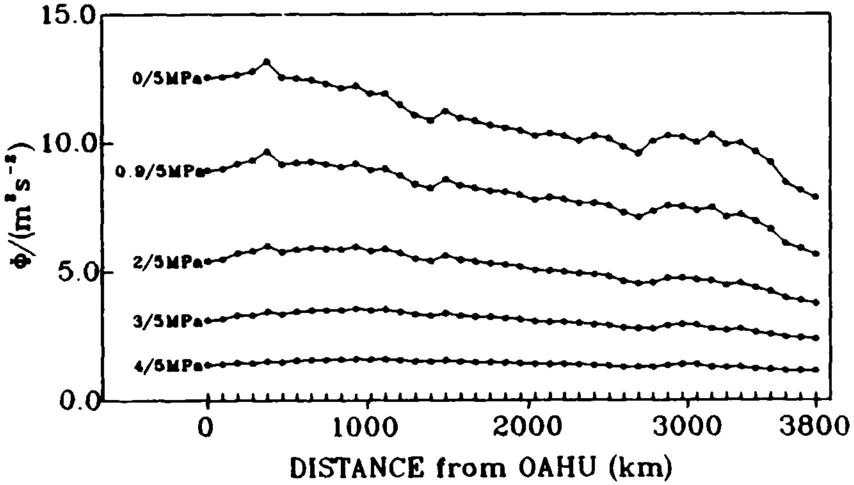

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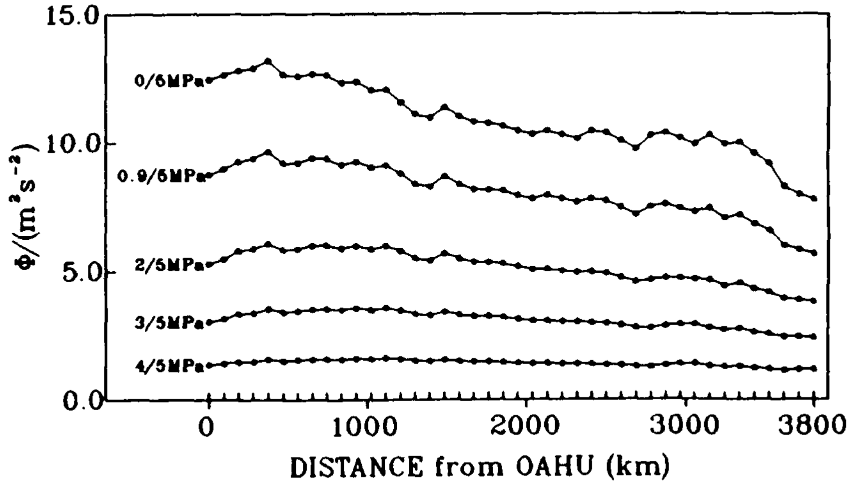
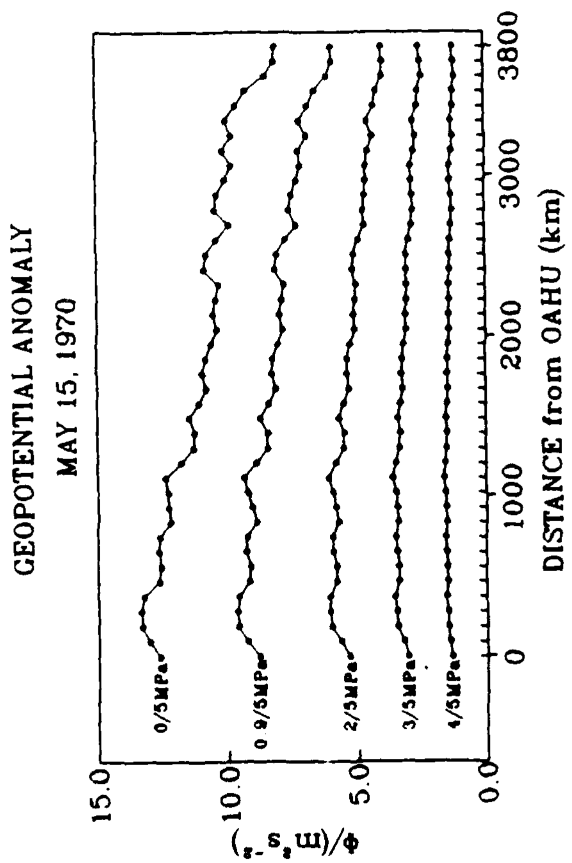
MAY 1, 1970




GEOPOTENTIAL ANOMALY
MAY 15, 1970
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0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
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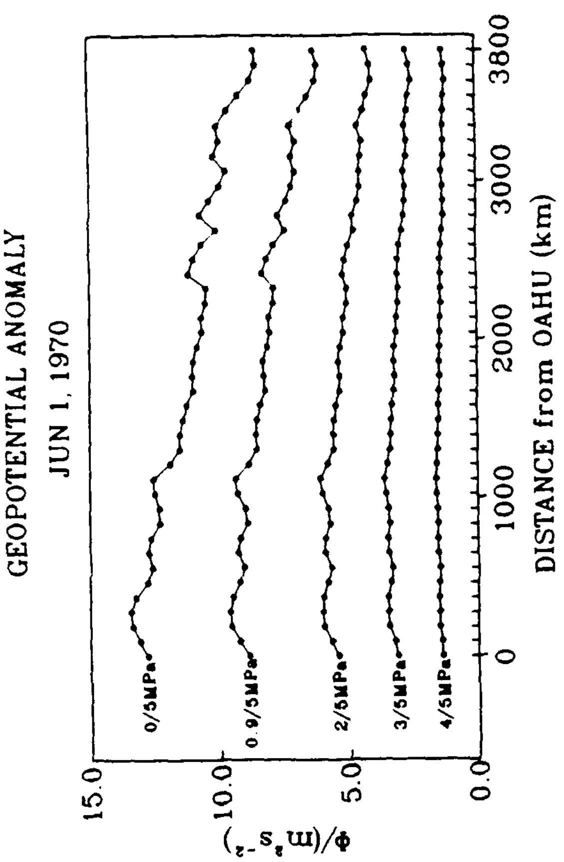
10.0
5.0
0.0
$\phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)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JUN 1, 1970
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3/5MPa
4/5MPa
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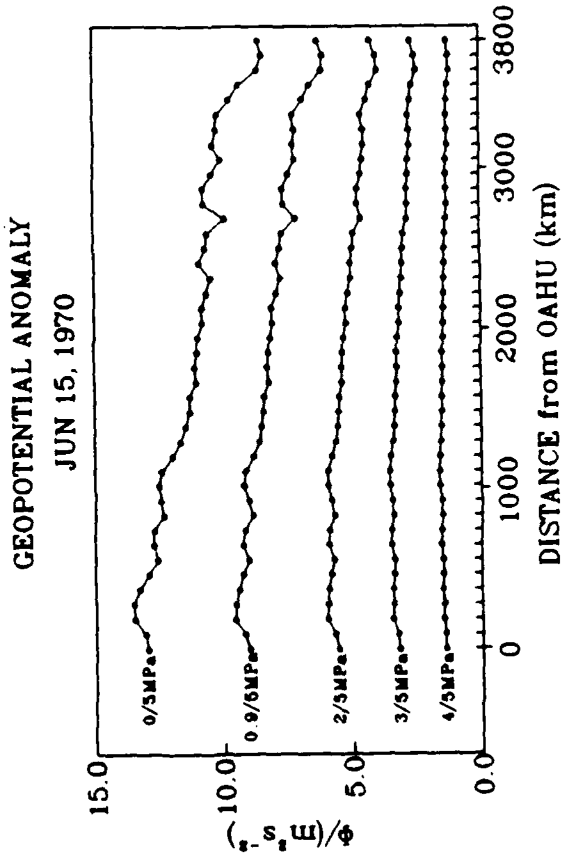
5.0
0.0
$\phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)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JUN 15, 1970
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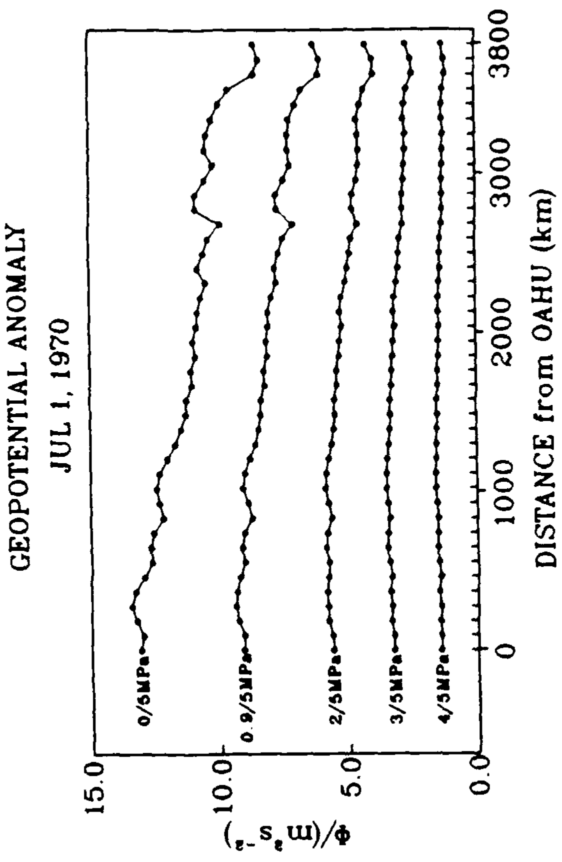
DISTANCE from OAHU (km)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4/5MPa
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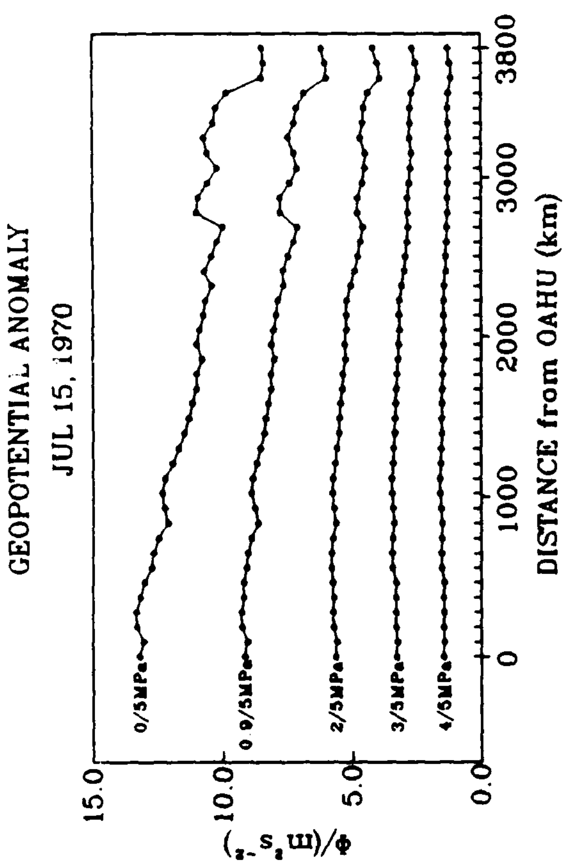
0
1000
2000
3000
3800
DISTANCE from OAHU (km)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1000
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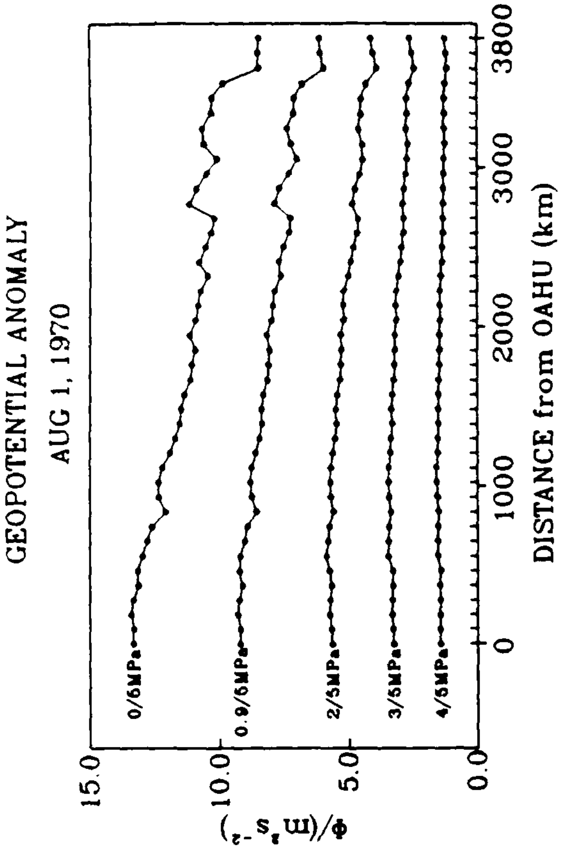
DISTANCE from OAHU (km)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2/5MPa
3/5MPa
4/5MPa
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5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
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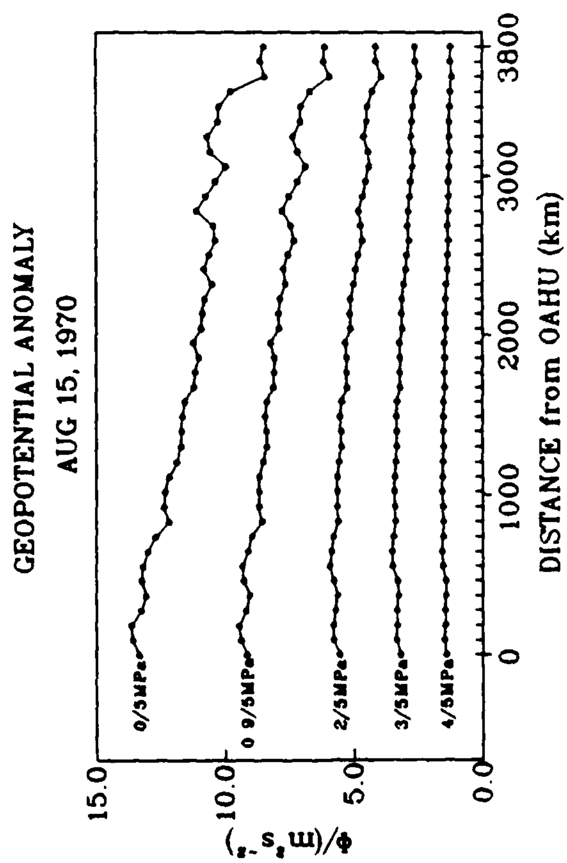
3800
DISTANCE from OAHU (km)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4/5MPa
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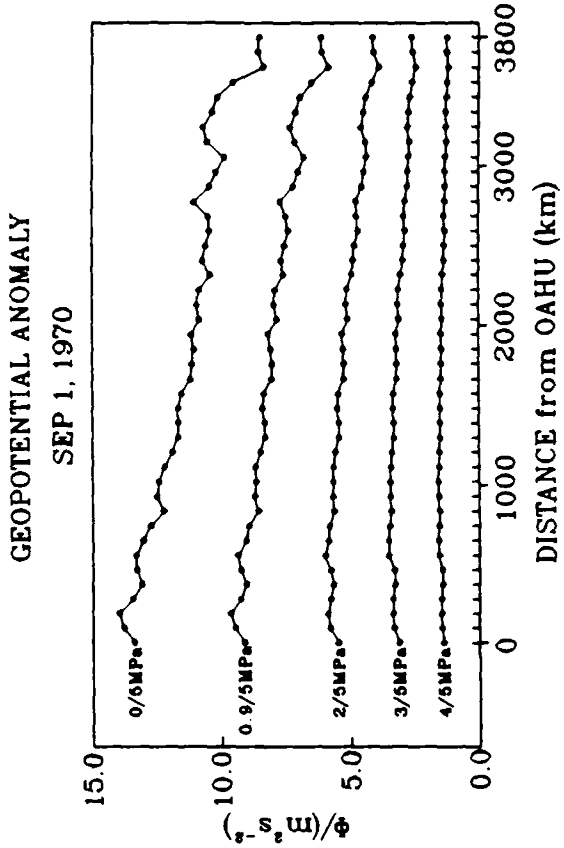
0
1000
2000
3000
3800
DISTANCE from OAHU (km)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3/5MPa
4/5MPa
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$\Phi/(m^2s^{-2})$
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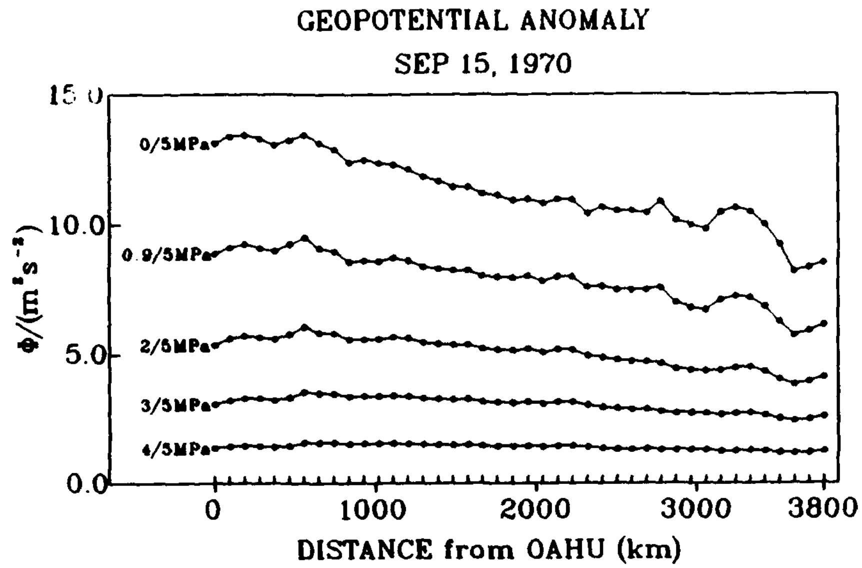
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
SEP 15, 1970
Φ/(m²s⁻²)
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0/5MPa
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3/5MPa
4/5MPa
0
1000
2000
3000
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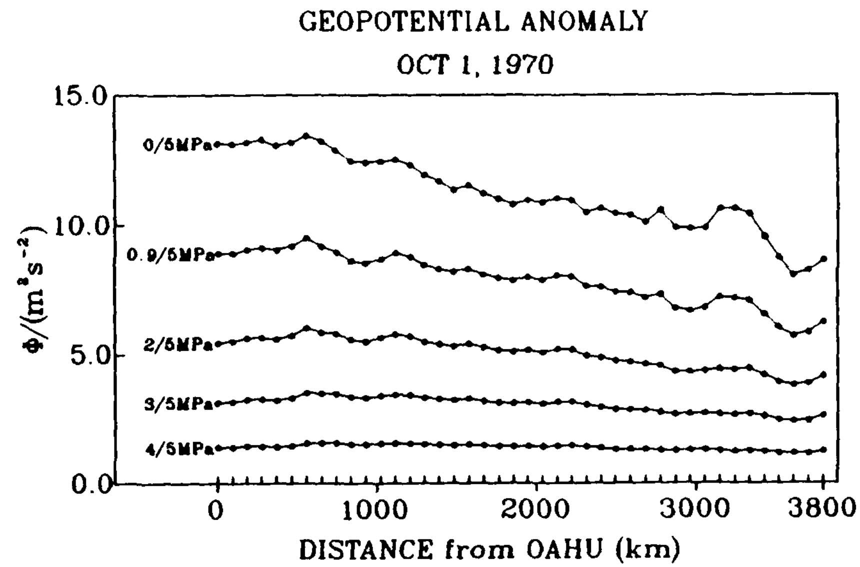
DISTANCE from OAHU (km)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OCT 1, 1970
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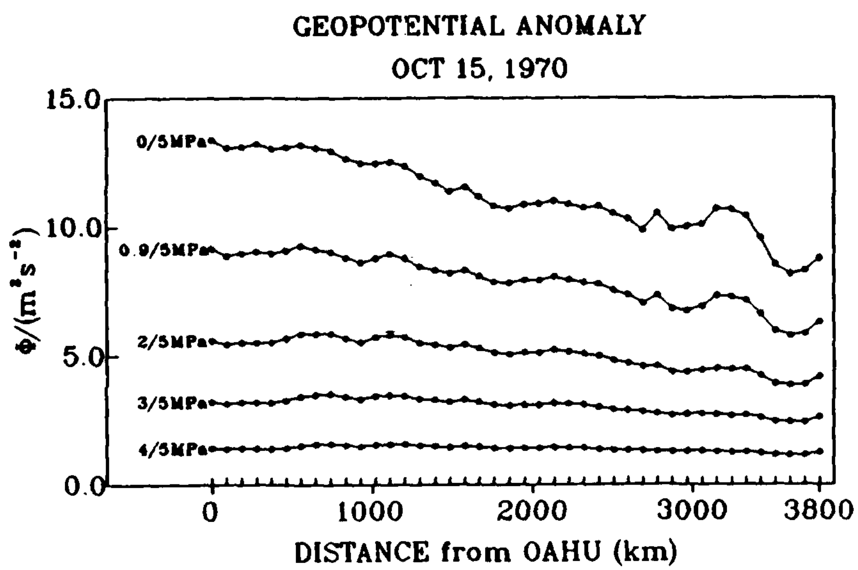
DISTANCE from OAHU (km)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OCT 15, 1970
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3/5MPa
4/5MPa
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2000
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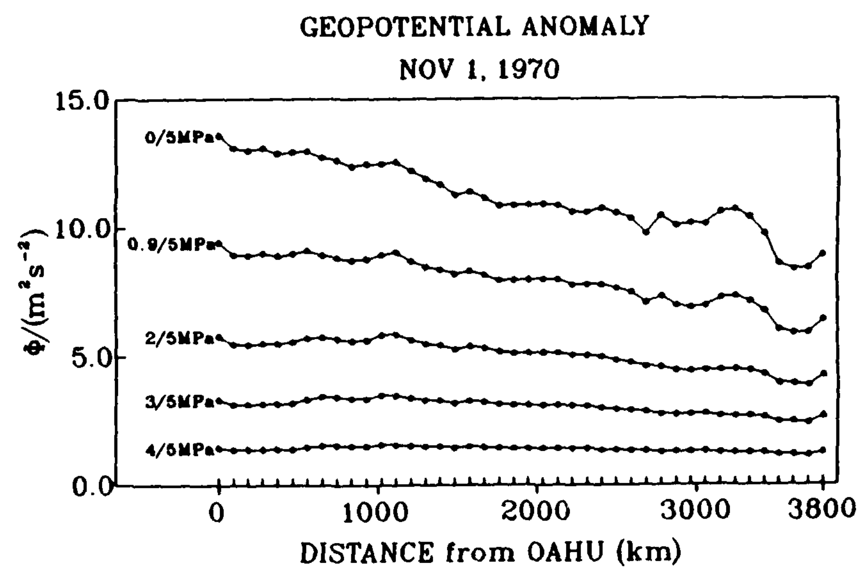
3800
DISTANCE from OAHU (km)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4/5MPa
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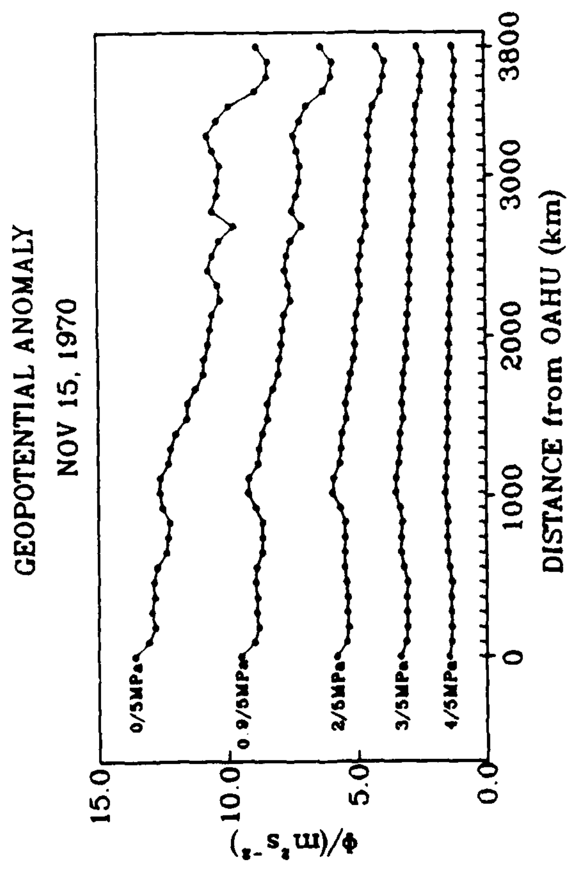
1000
2000
3000
3800
DISTANCE from OAHU (km)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NOV 15, 1970
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4/5MPa
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Φ/(m²s⁻²)
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1000
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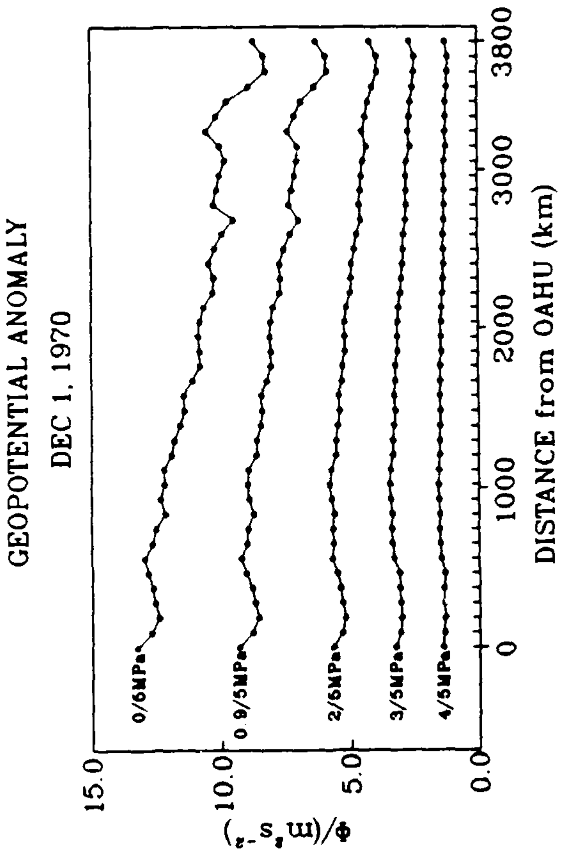
DISTANCE from OAHU (km)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DEC 1, 1970
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4/5MPa
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5.0
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Φ/(m²s⁻²)
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1000
2000
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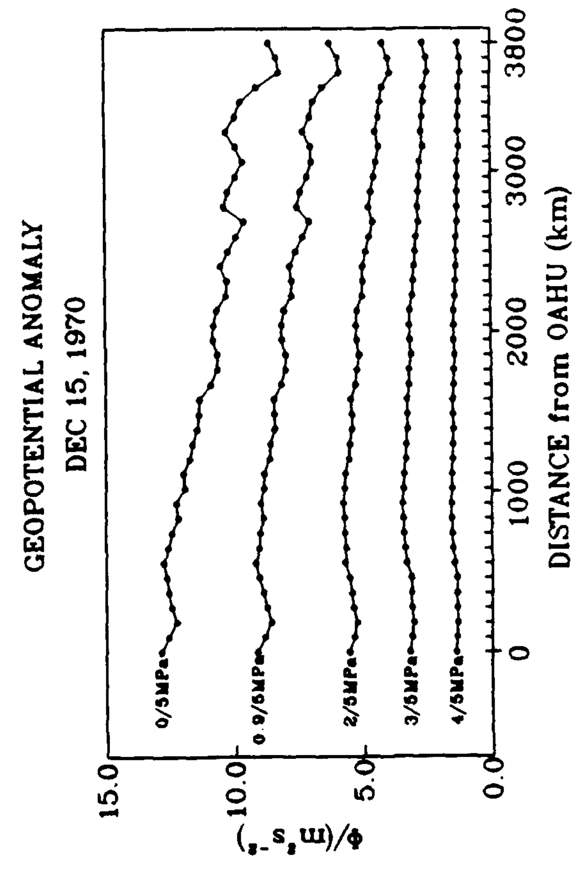
3800
DISTANCE from OAHU (km)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DEC 15, 1970
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4/5MPa
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5.0
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Φ/(m²s⁻²)
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1000
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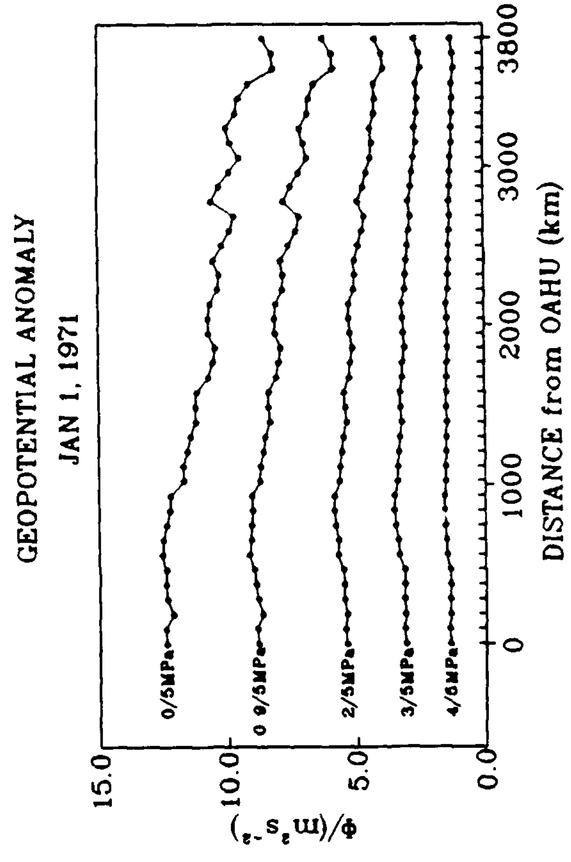
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JAN 1, 1971
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2/5MPa
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4/5MPa
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10.0
5.0
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Φ/(m²s⁻²)
0
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2000
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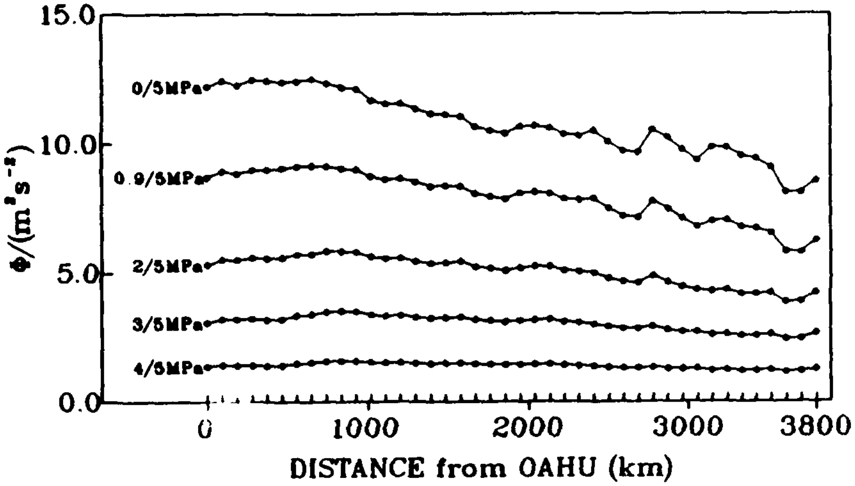
3800
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
JAN 15, 1971



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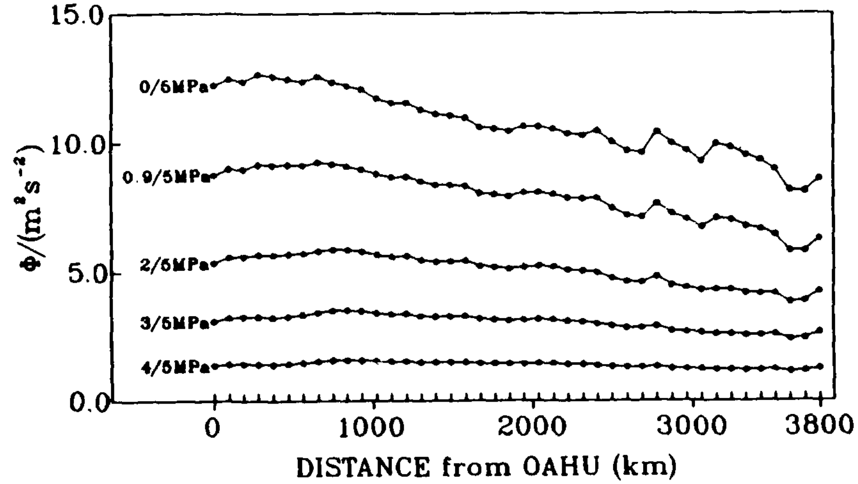
FEB 1, 1971



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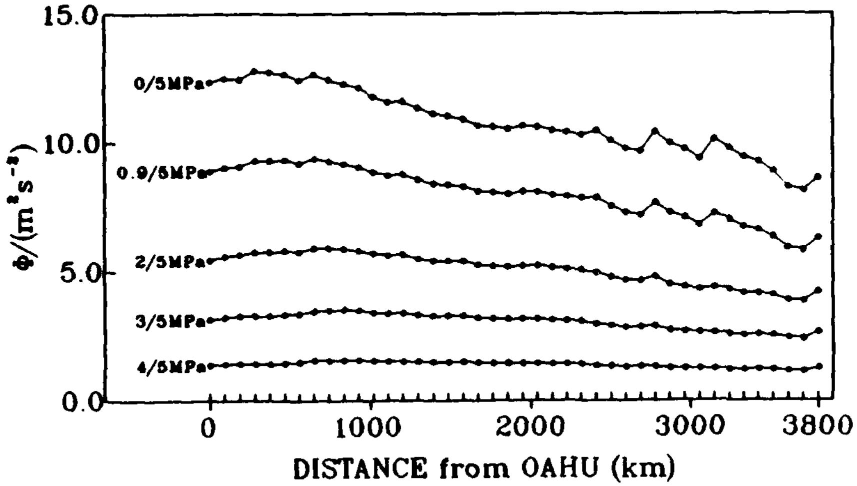
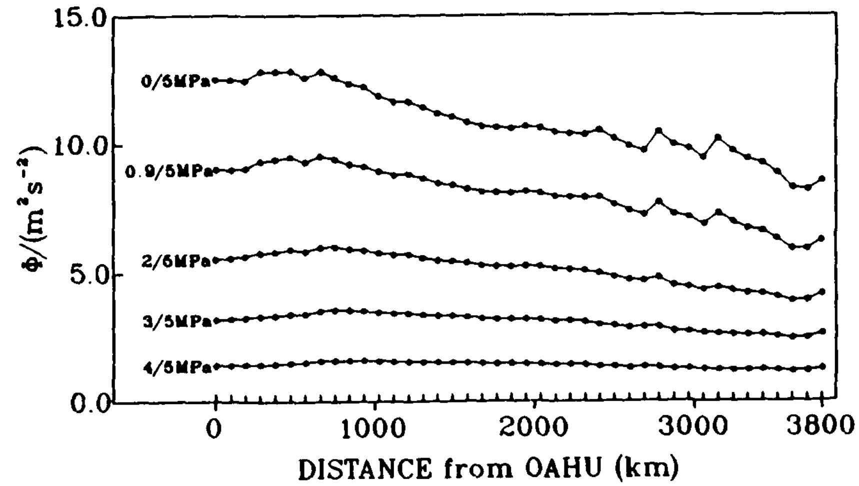
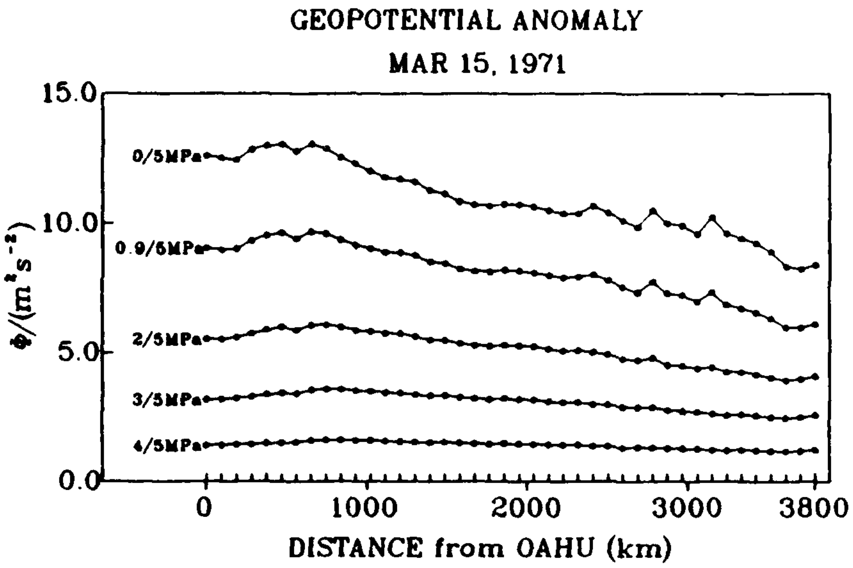
FEB 15, 1971



GEOPOTENTIAL ANOMALY
MAR 1, 1971




GEOPOTENTIAL ANOMALY
MAR 15, 1971
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5.0
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0/5MPa
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2/5MPa
3/5MPa
4/5MPa
0
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2000
3000
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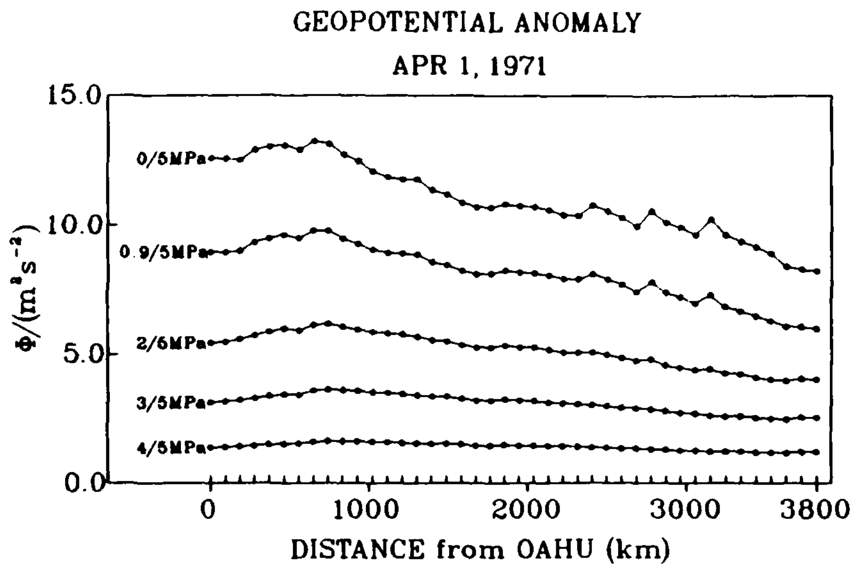
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
APR 1, 1971
Φ/(m²s⁻²)
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4/5MPa
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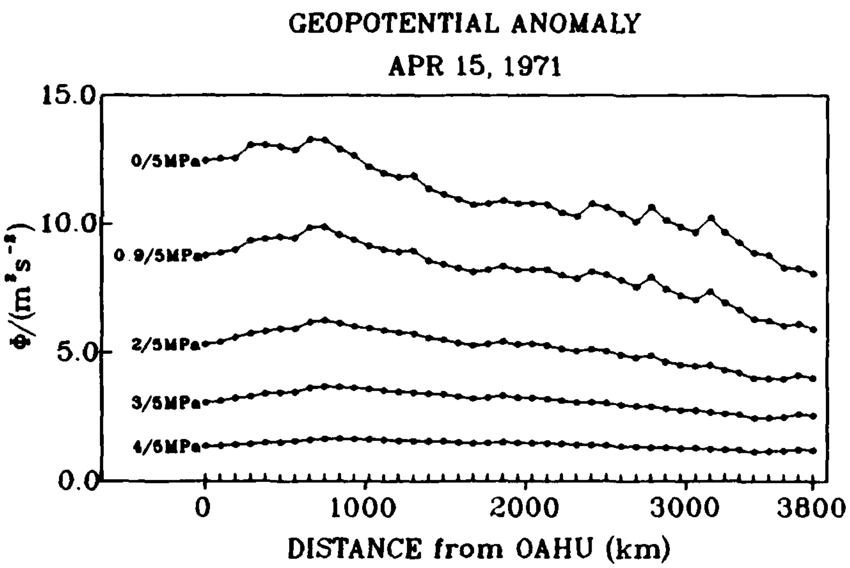
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
APR 15, 1971
Φ/(m²s⁻²)
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0/5MPa
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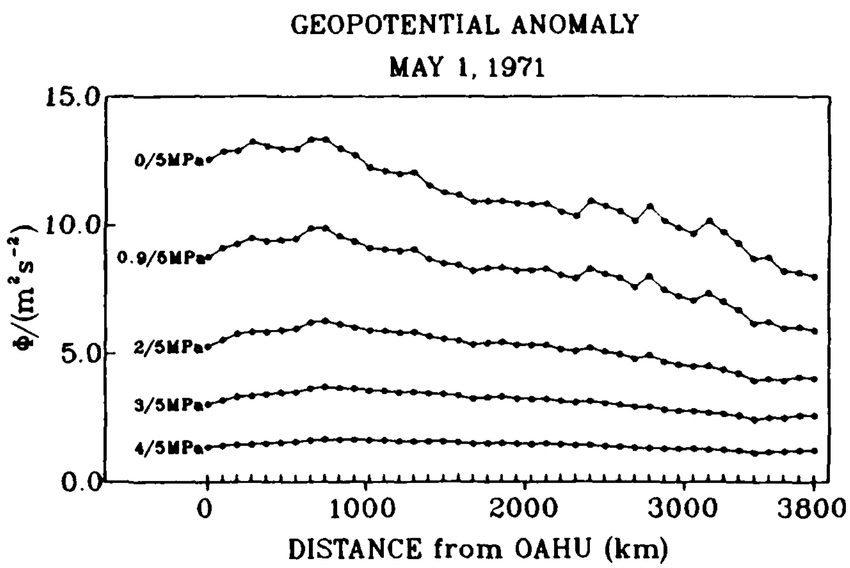
DISTANCE from OAHU (km)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MAY 1, 1971
Φ/(m²s⁻²)
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0/5MPa
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3/5MPa
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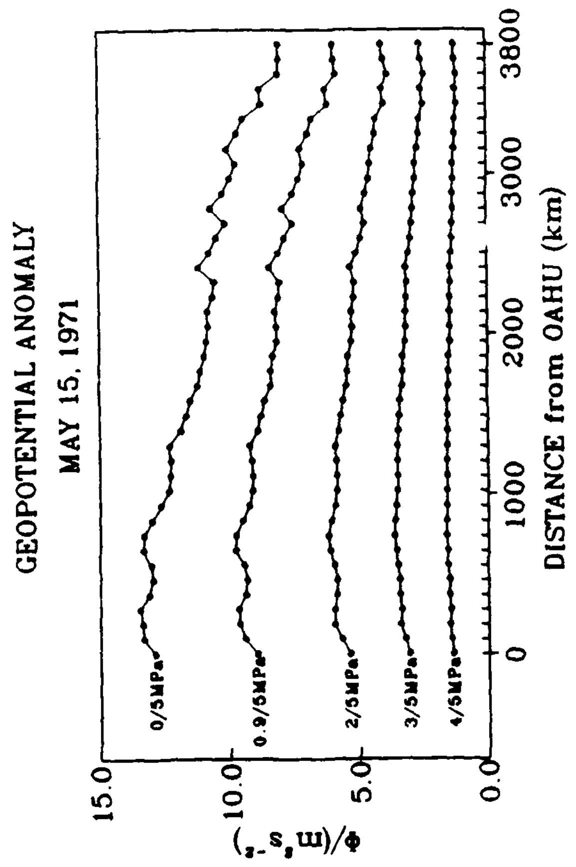
DISTANCE from OAHU (km)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MAY 15, 1971
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Φ/(m²s⁻²)
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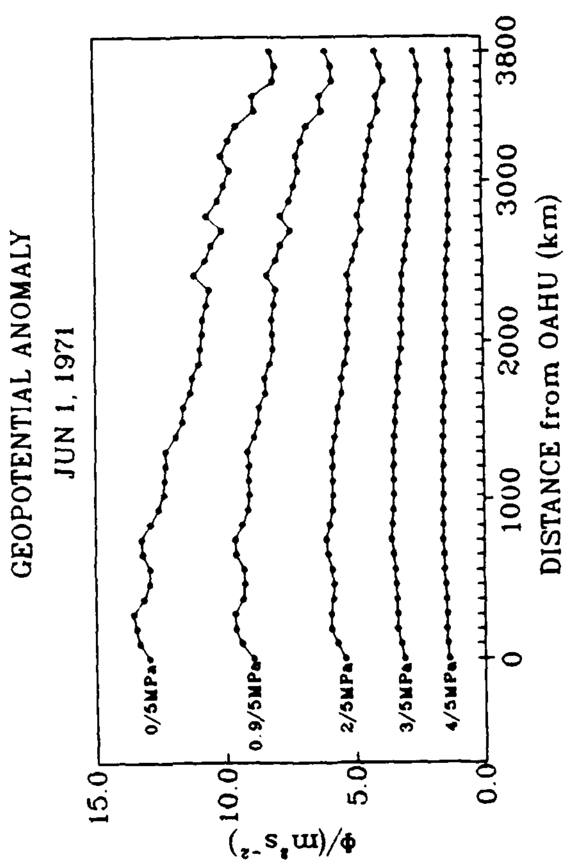
DISTANCE from OAHU (km)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4/5MPa
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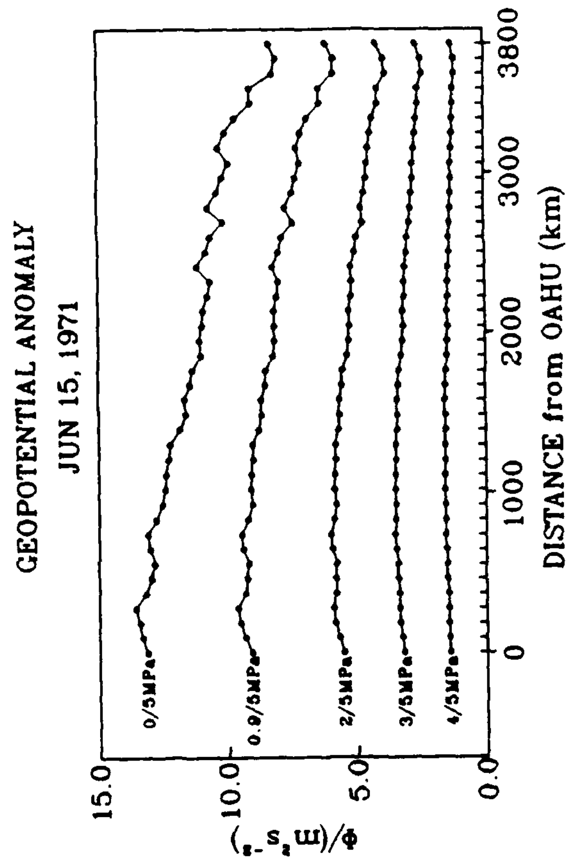
DISTANCE from OAHU (km)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JUN 15, 1971
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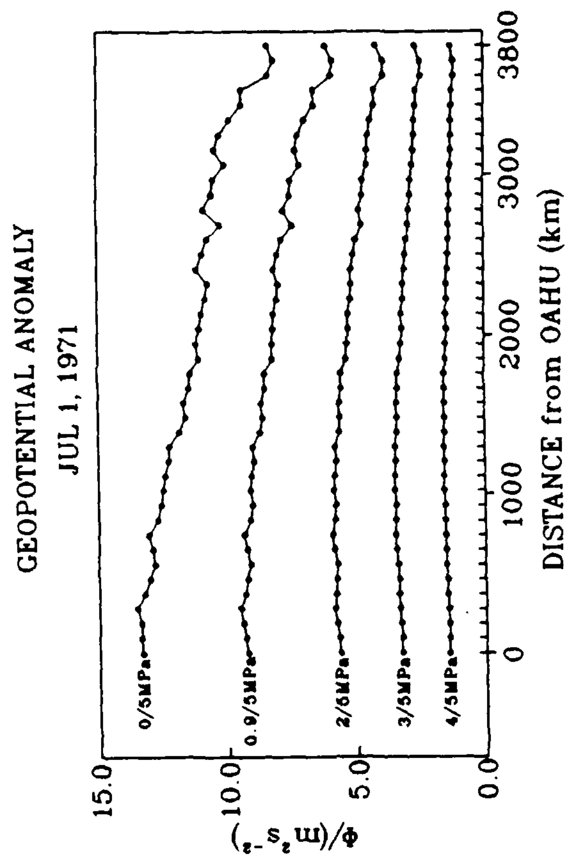
DISTANCE from OAHU (km)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JUL 1, 1971
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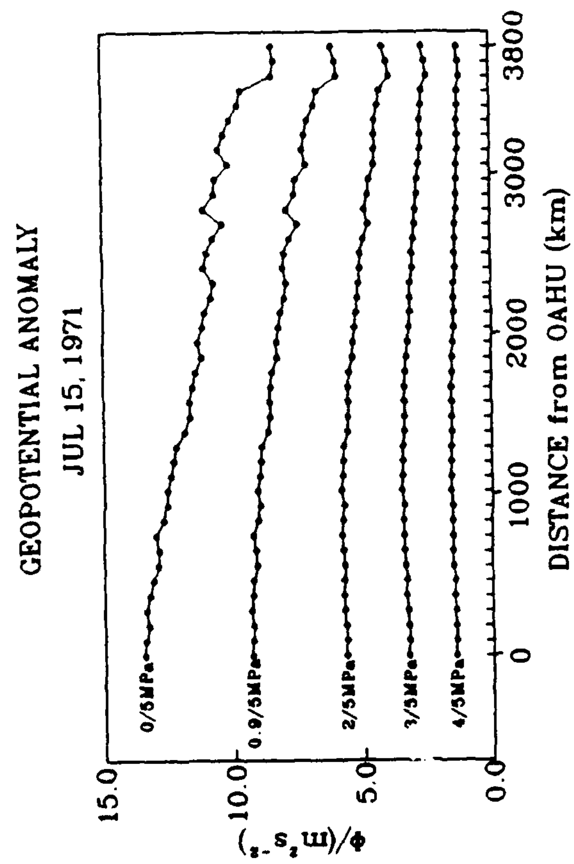
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUL 15, 1971
DISTANCE from OAHU (km)
Φ/(m²s⁻²)
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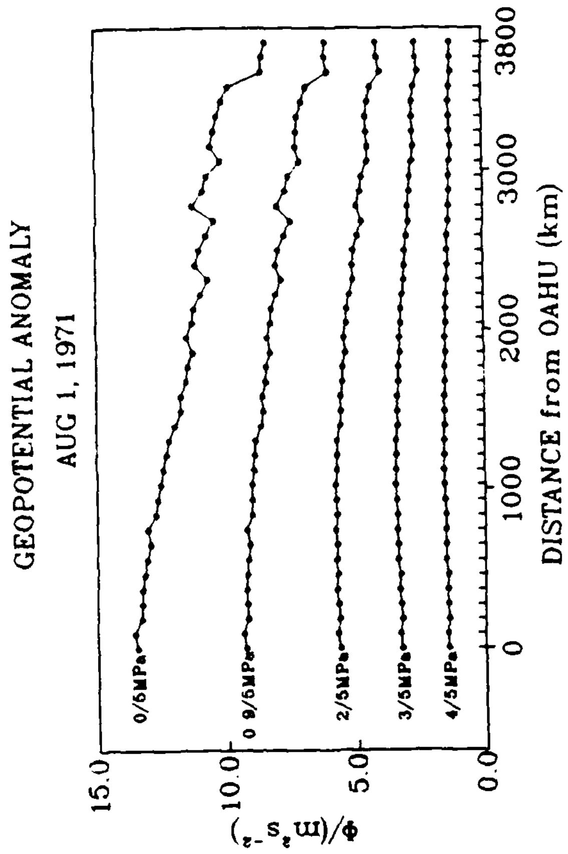
GEOPOTENTIAL ANOMALY
AUG 1, 1971
DISTANCE from OAHU (km)
Φ/(m²s⁻²)
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4/5MPa
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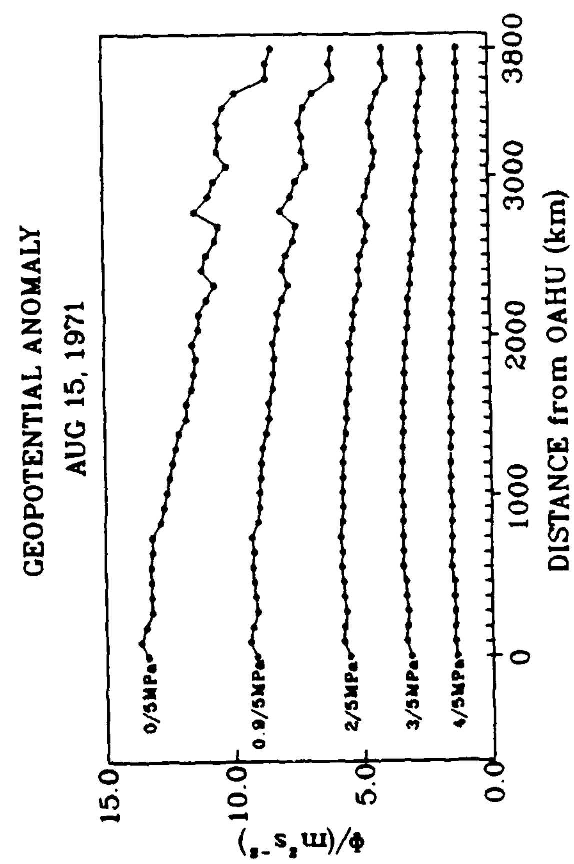
GEOPOTENTIAL ANOMALY
AUG 15, 1971
DISTANCE from OAHU (km)
Φ/(m²s⁻²)
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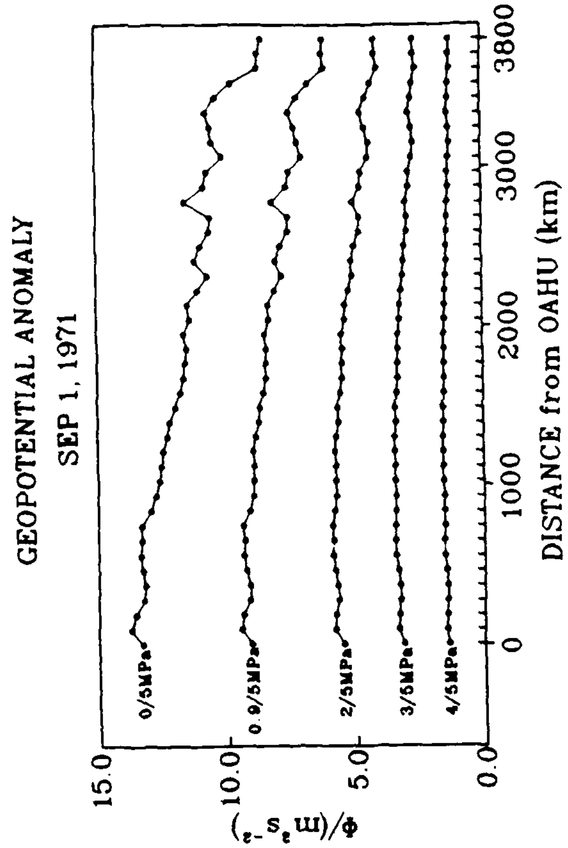
3800


GEOPOTENTIAL ANOMALY
SEP 1, 1971
DISTANCE from OAHU (km)
Φ/(m²s⁻²)
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
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5.0
0.0
0
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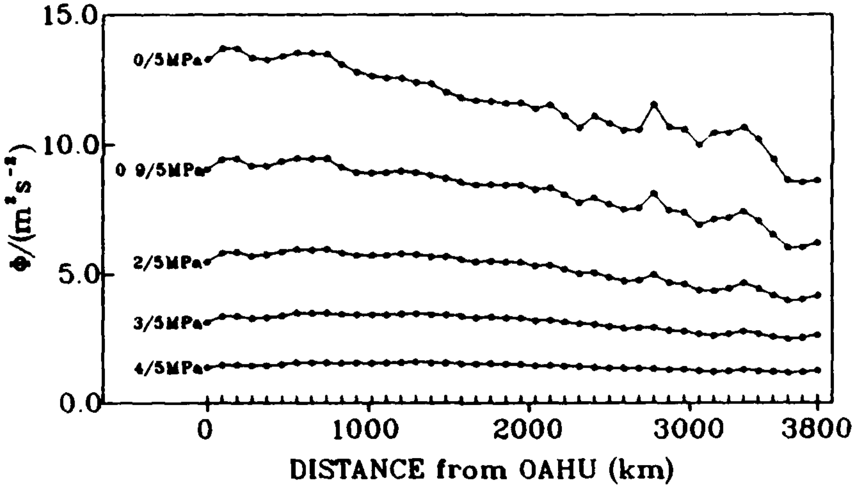
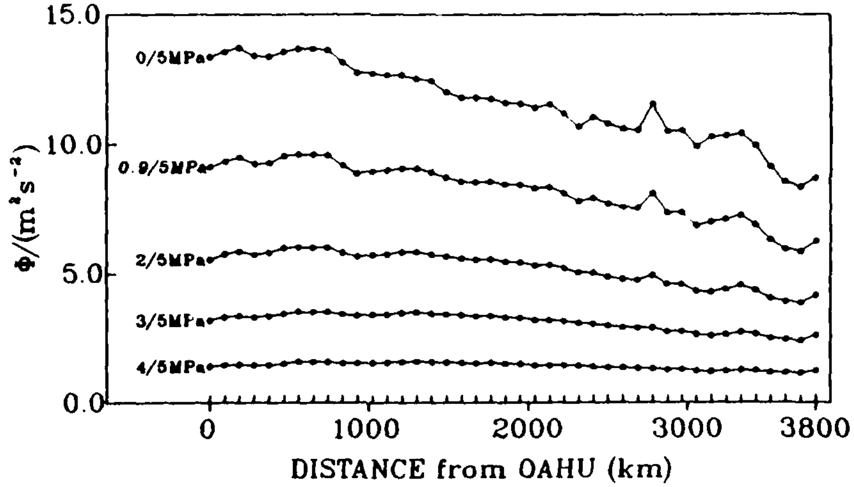
2000
3000
3800

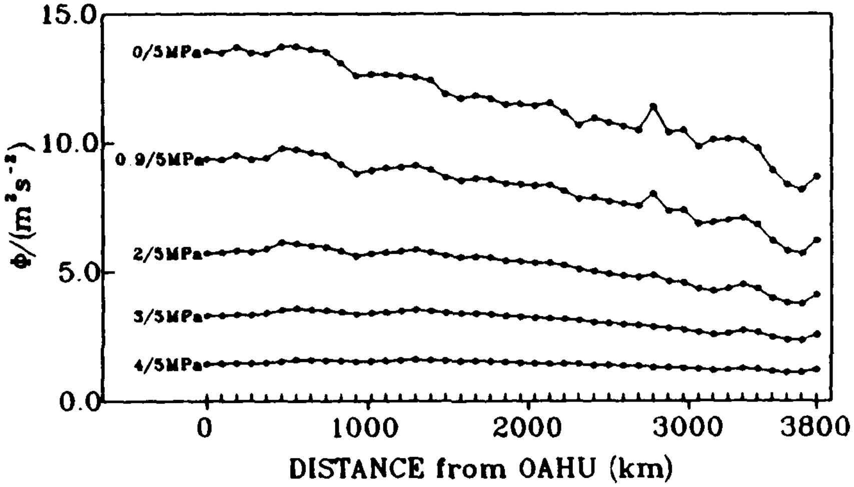
GEOPOTENTIAL ANOMALY
SEP 15, 1971



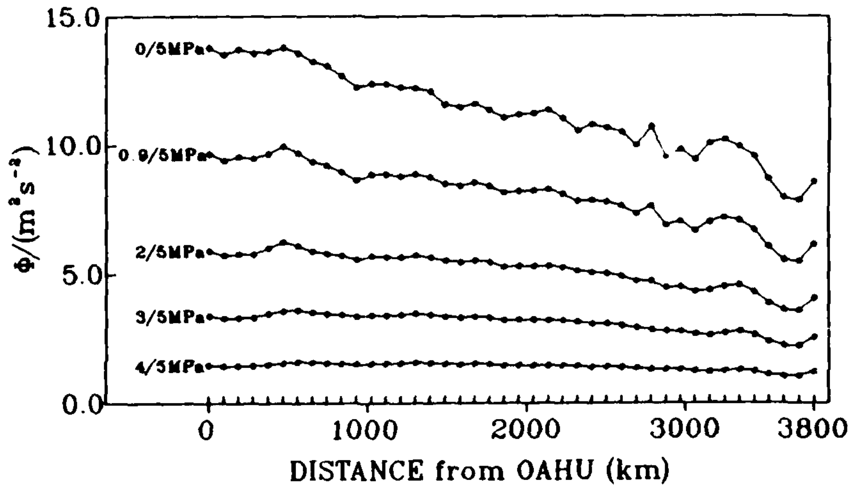
GEOPOTENTIAL ANOMALY
OCT 1, 1971

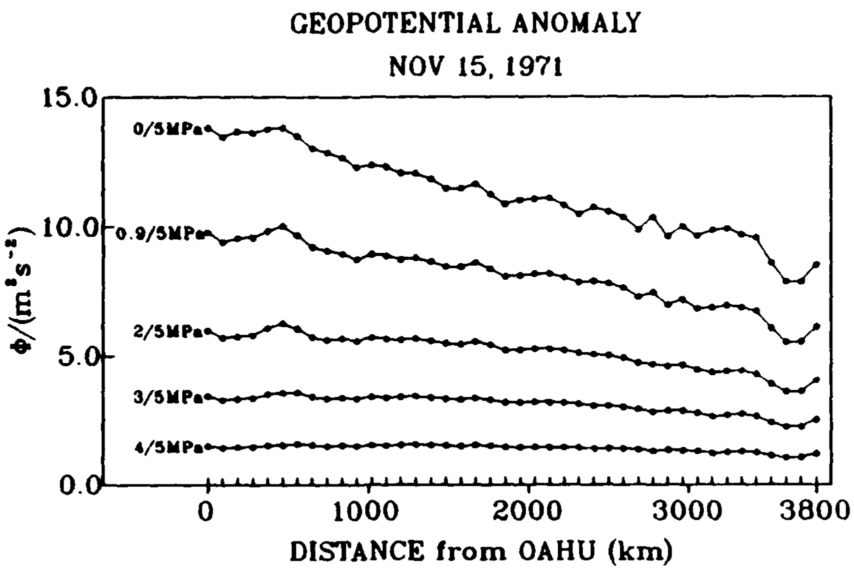


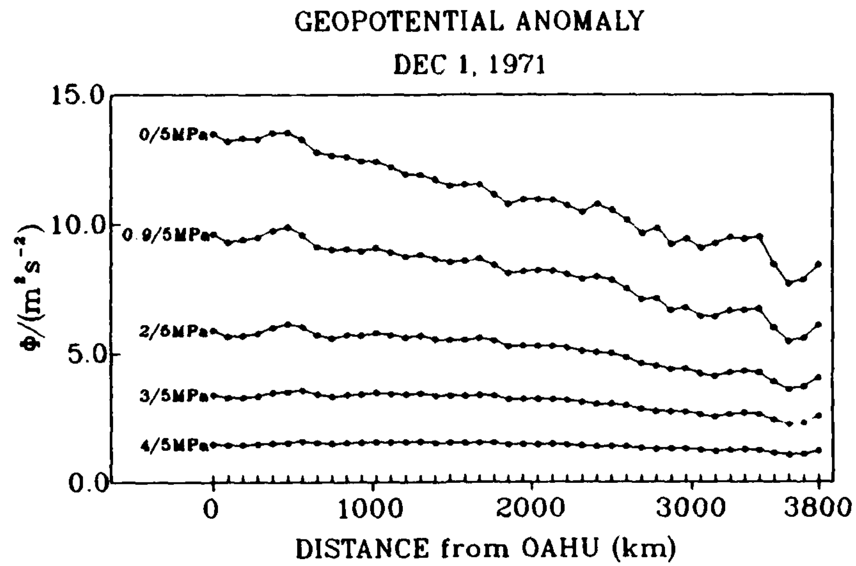
GEOPOTENTIAL ANOMALY
OCT 15, 1971

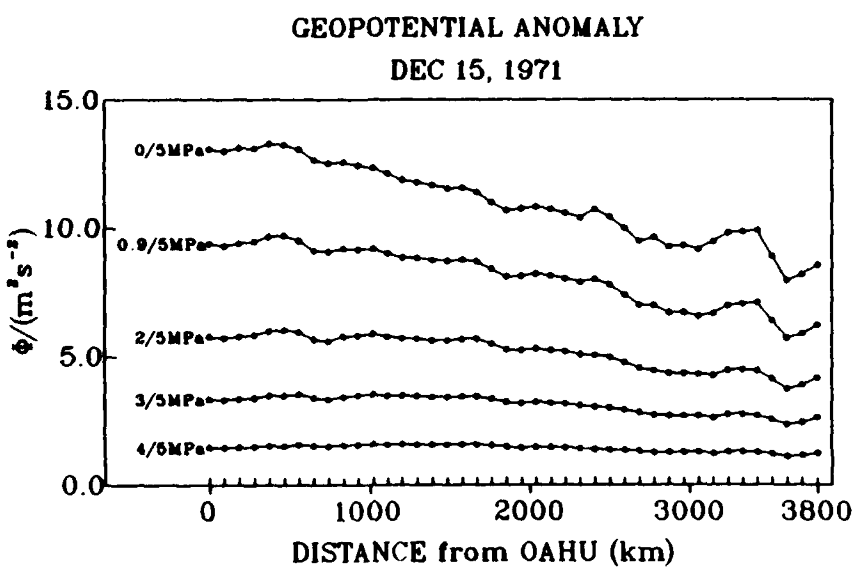


GEOPOTENTIAL ANOMALY
NOV 1, 1971




GEOPOTENTIAL ANOMALY
NOV 15, 1971
15.0
10.0
5.0
0.0
Φ/(m²s⁻²)
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
DEC 1, 1971
15.0
10.0
5.0
0.0
Φ/(m²s⁻²)
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
DEC 15, 1971
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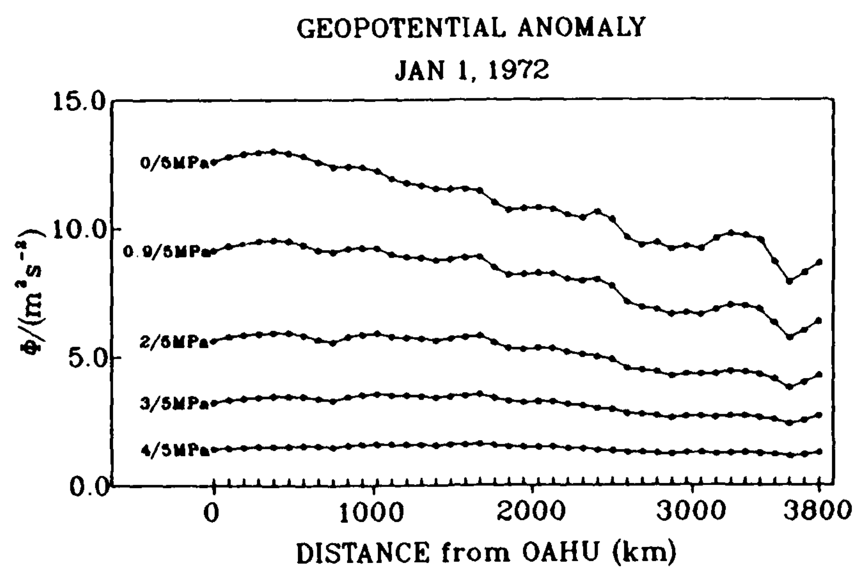
10.0
5.0
0.0
Φ/(m²s⁻²)
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JAN 1, 1972
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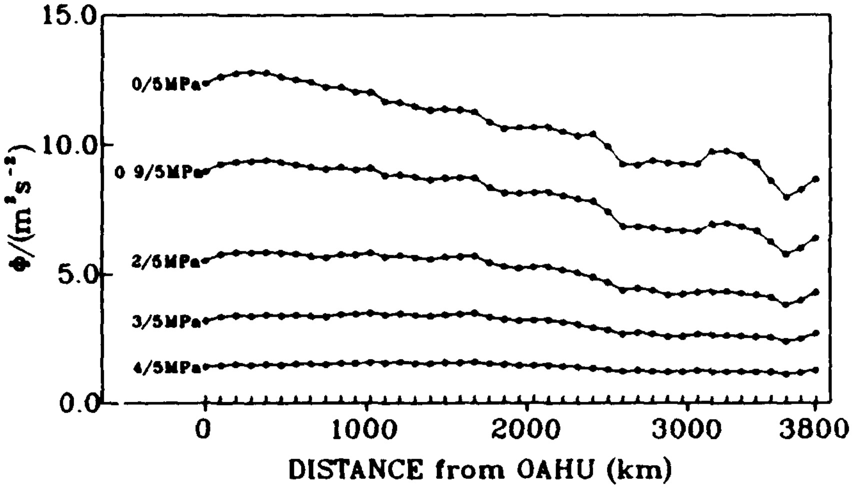
10.0
5.0
0.0
Φ/(m²s⁻²)
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
JAN 15, 1972



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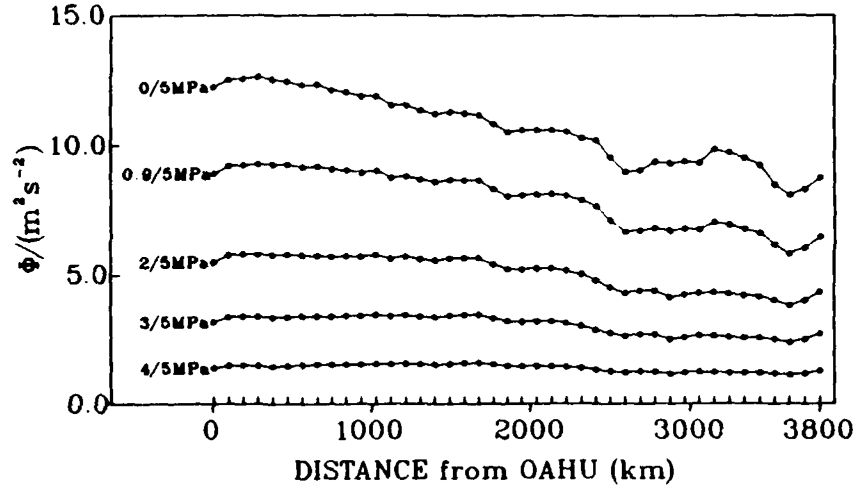

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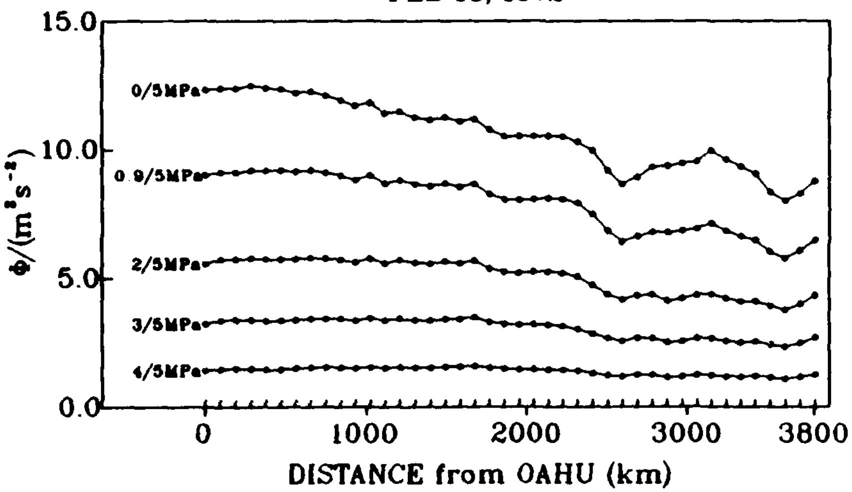
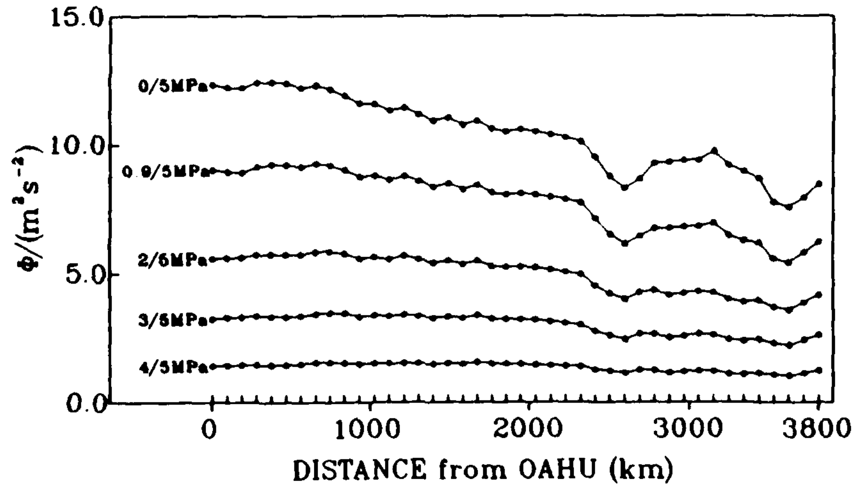


GEOPOTENTIAL ANOMALY
MAR 1, 1972



GEOPOTENTIAL ANOMALY
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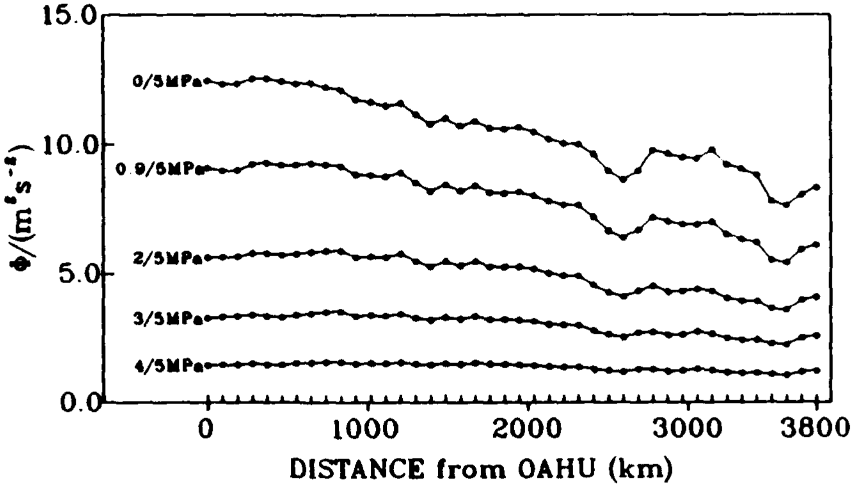
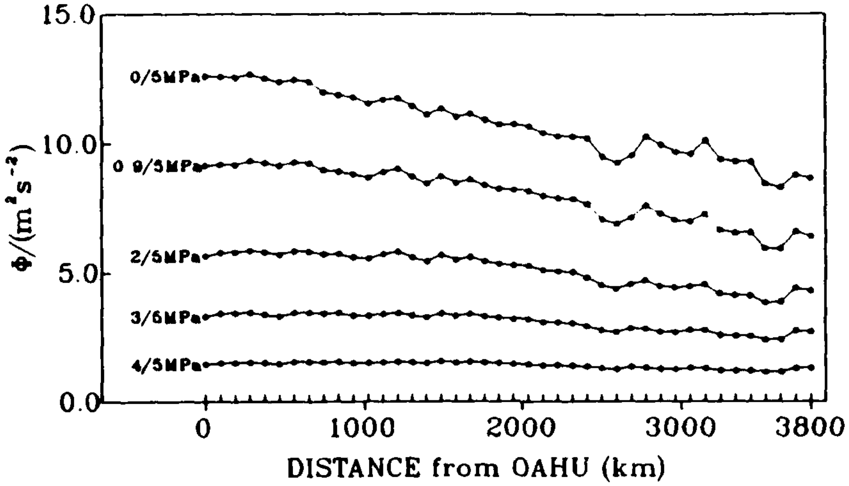


GEOPOTENTIAL ANOMALY
APR 1, 1972



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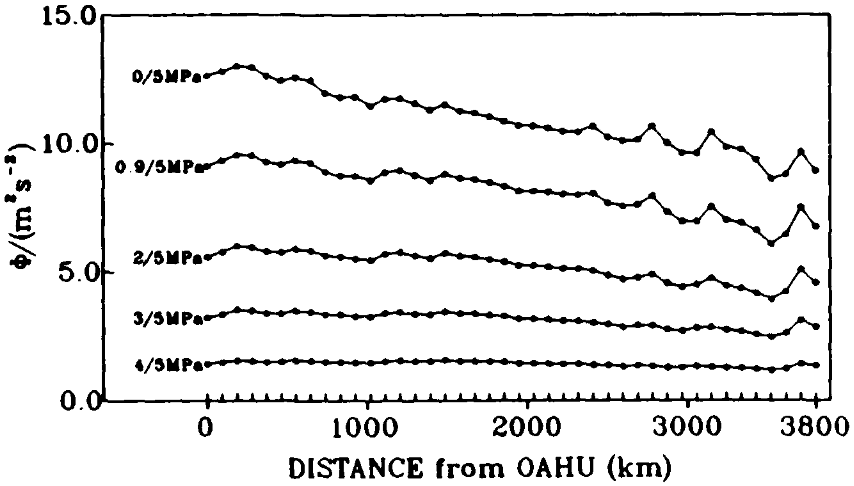

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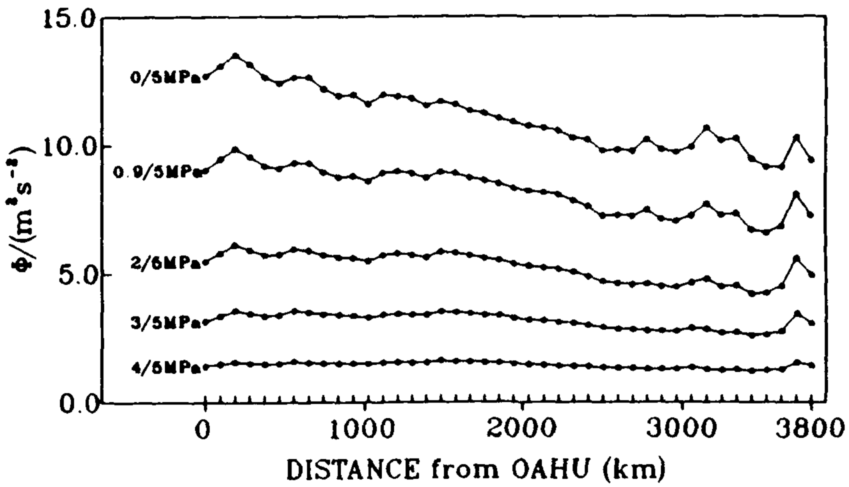

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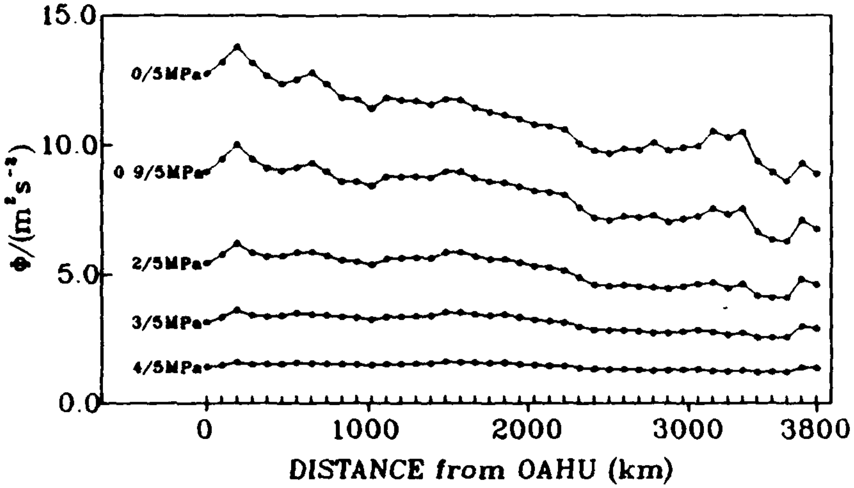
MAY 15, 1972



GEOPOTENTIAL ANOMALY
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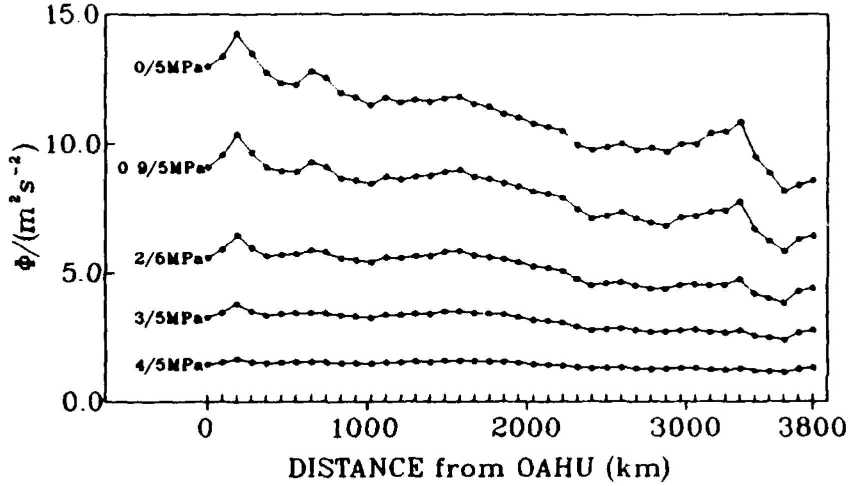

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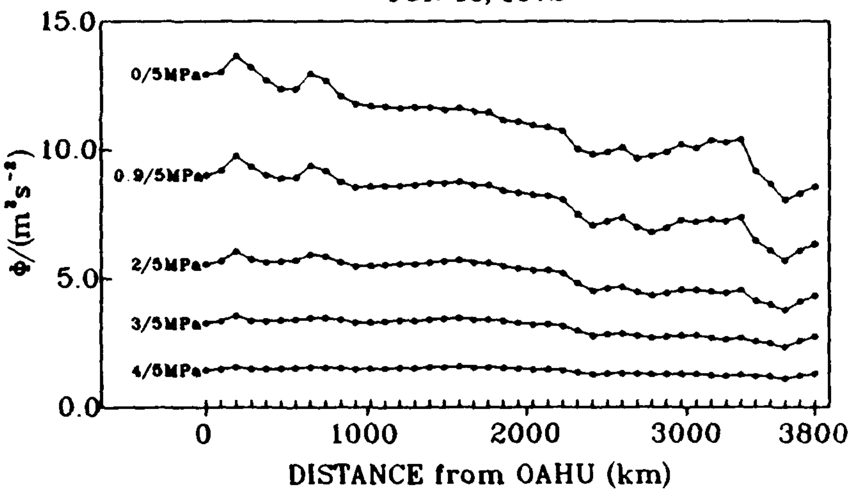

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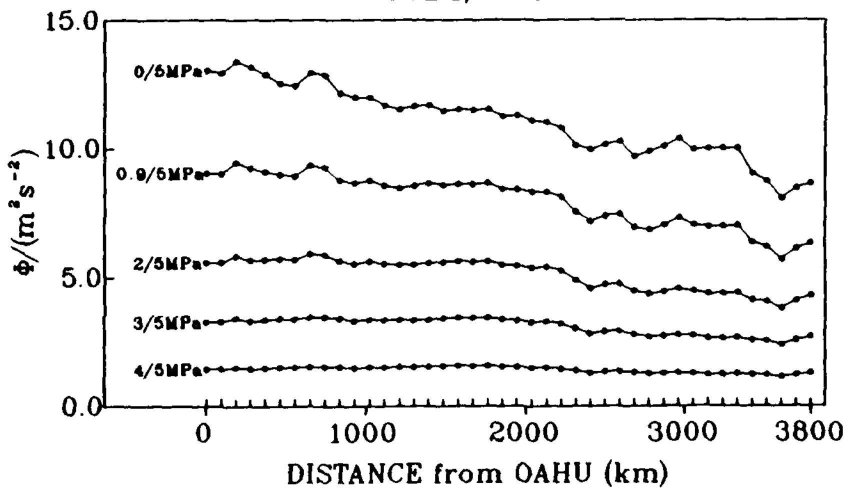

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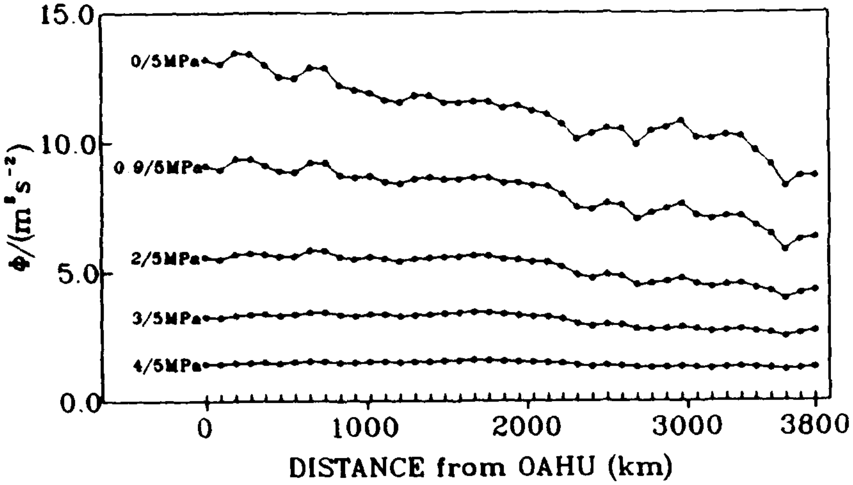
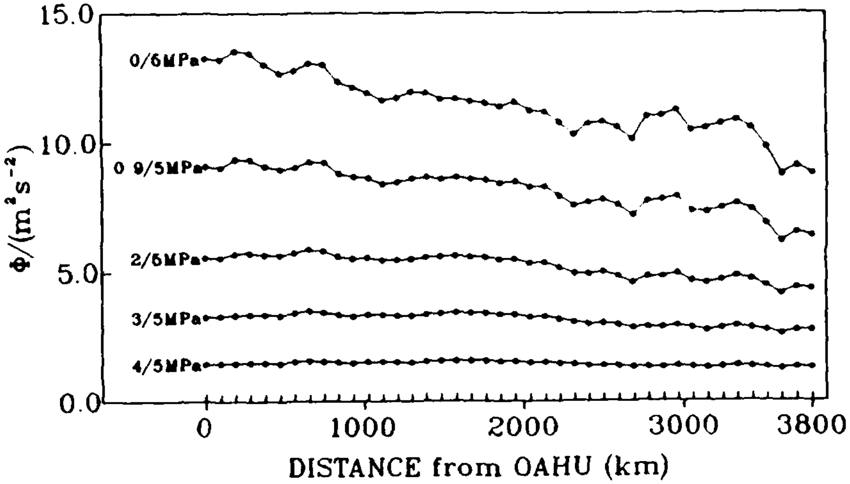


GEOPOTENTIAL ANOMALY
AUG 1, 1972



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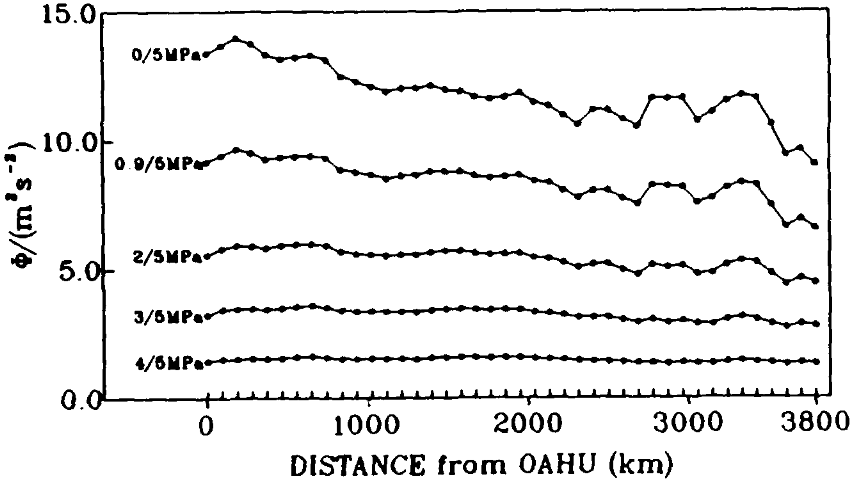

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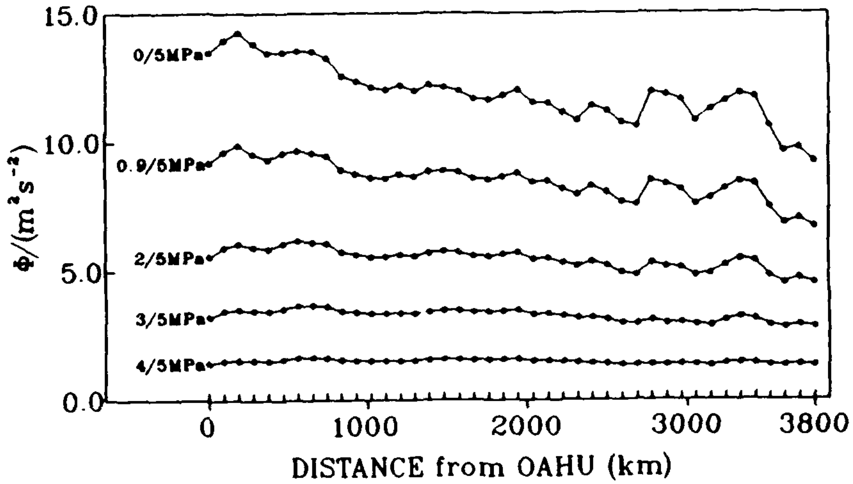
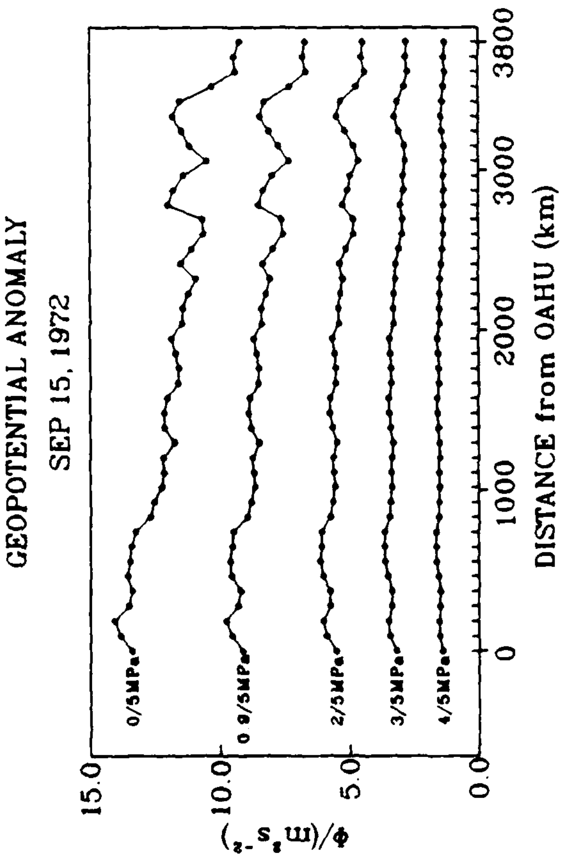
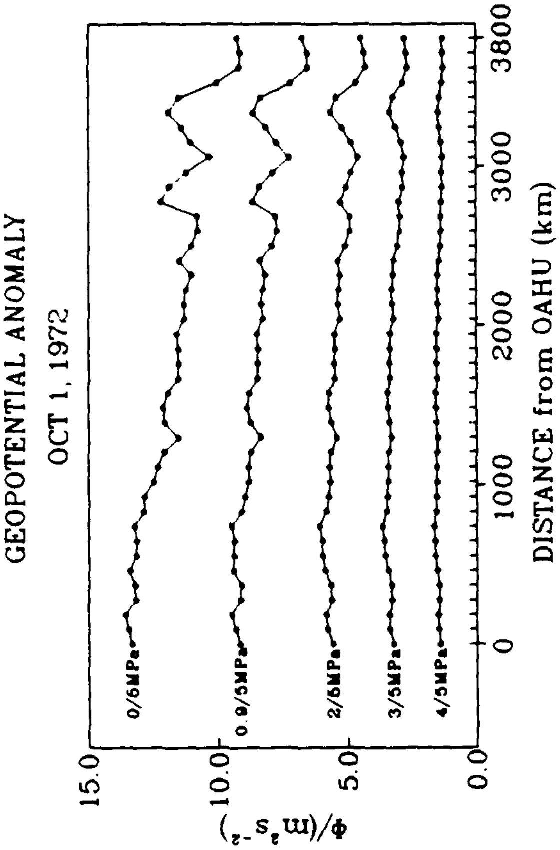
SEP 1, 1972




GEOPOTENTIAL ANOMALY
SEP 15, 1972
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
ϕ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 1, 1972
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4/5MPa
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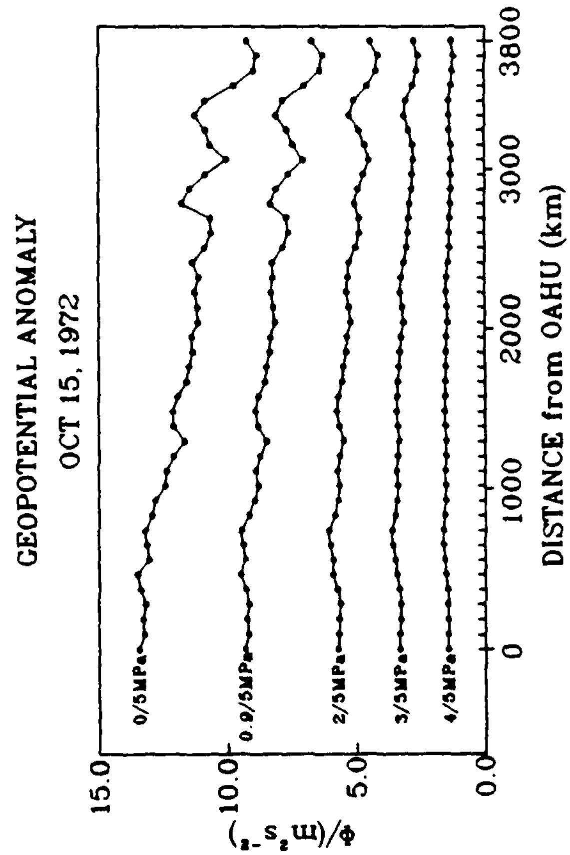
ϕ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 15, 1972
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0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
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ϕ/(m²s⁻²)
0
1000
2000
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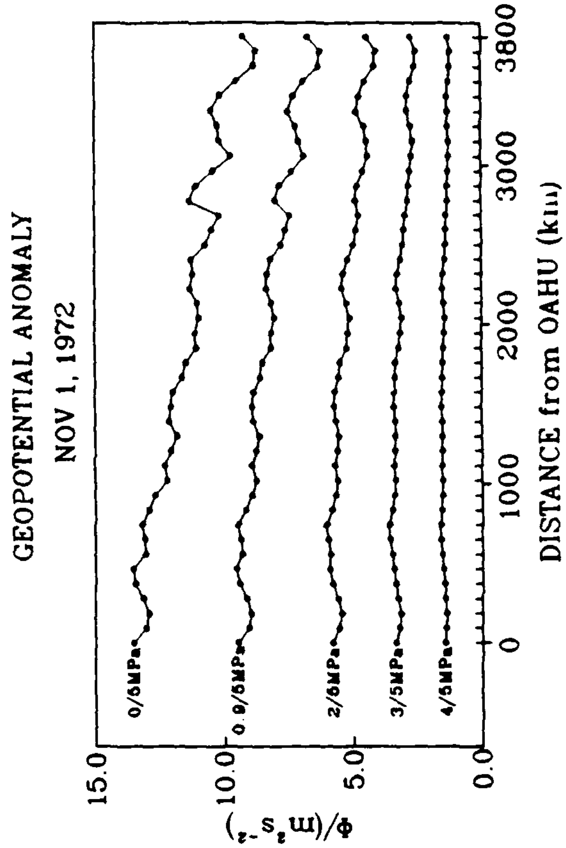
DISTANCE from OAHU (km)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3/5MPa
4/5MPa
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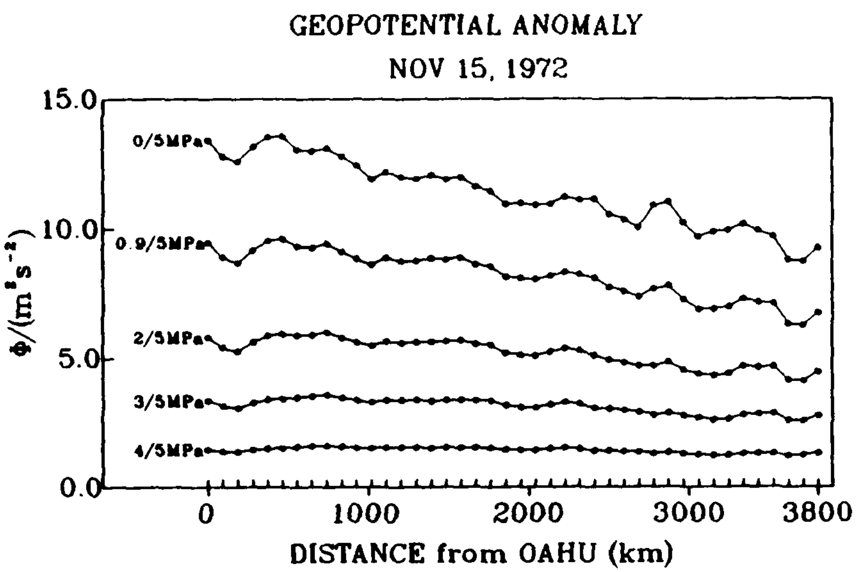
0.0
ϕ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)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NOV 15, 1972
Φ/(m²s⁻²)
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3/5MPa
4/5MPa
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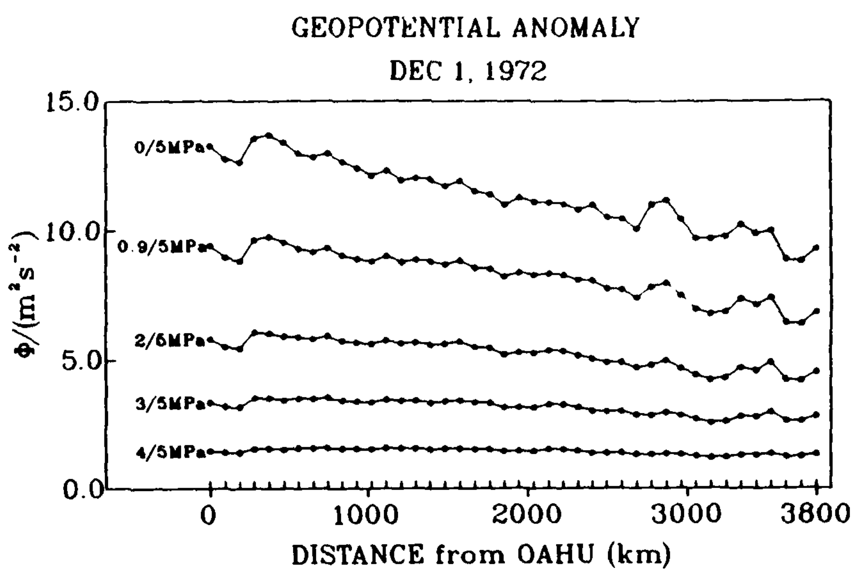
3800
DISTANCE from OAHU (km)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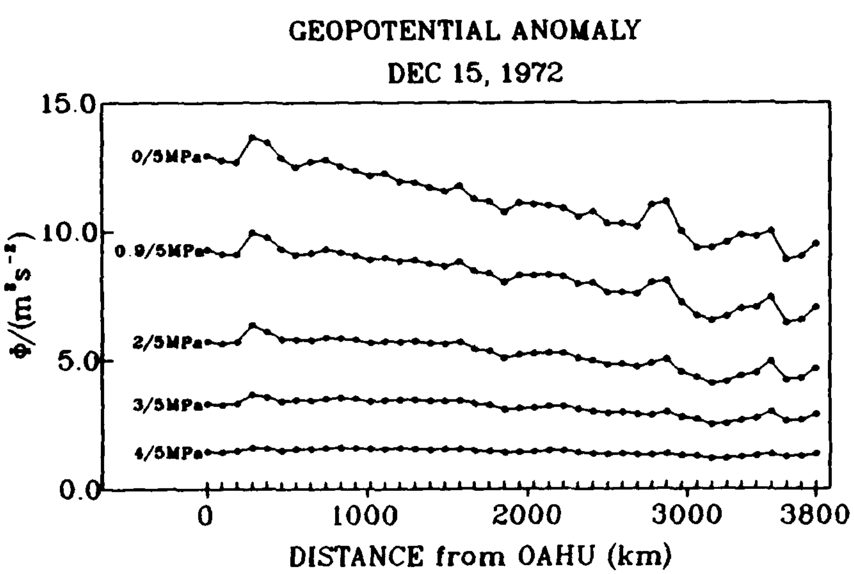
DISTANCE from OAHU (km)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3/5MPa
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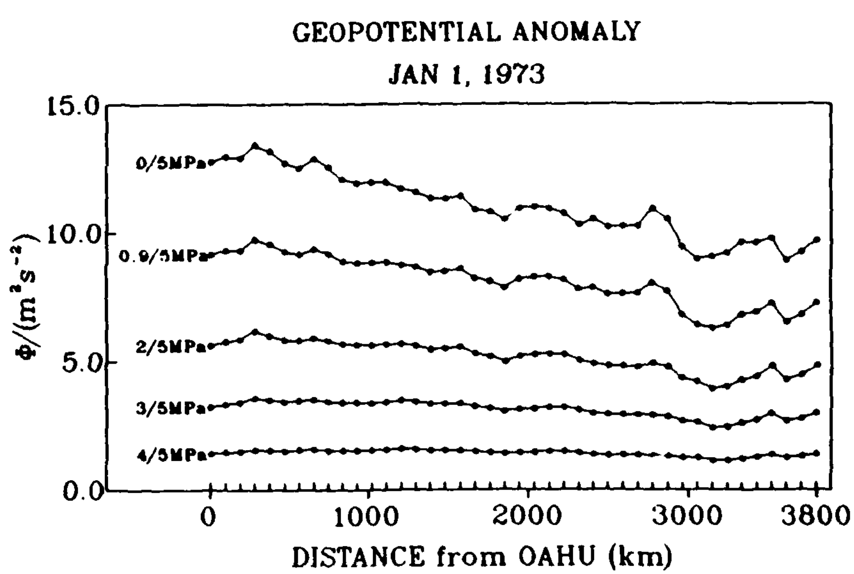
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JAN 1, 1973
Φ/(m²s⁻²)
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5.0
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0/5MPa
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4/5MPa
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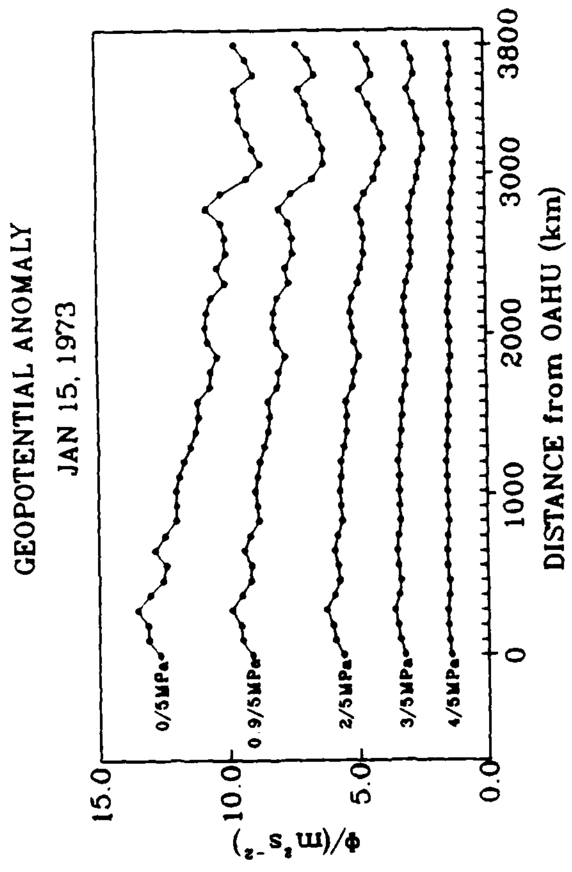
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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4/5MPa
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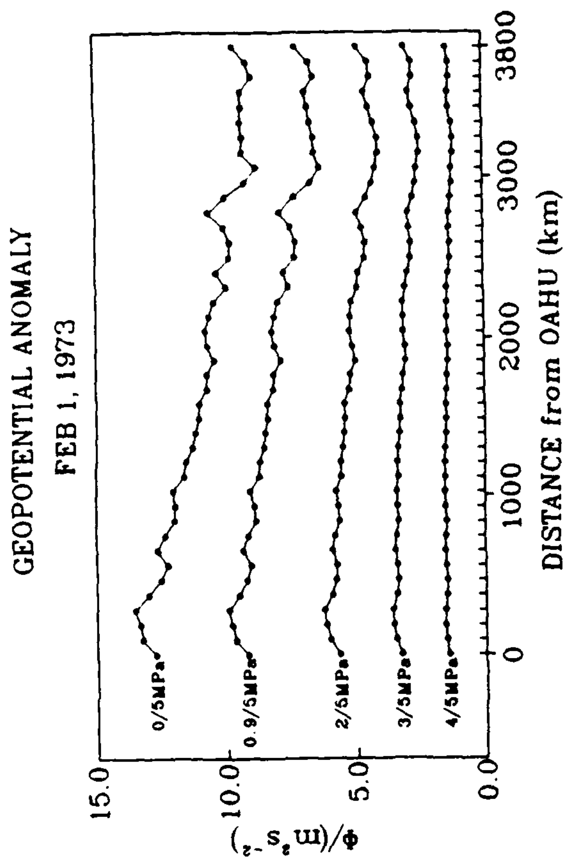
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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2/5MPa
3/5MPa
4/5MPa
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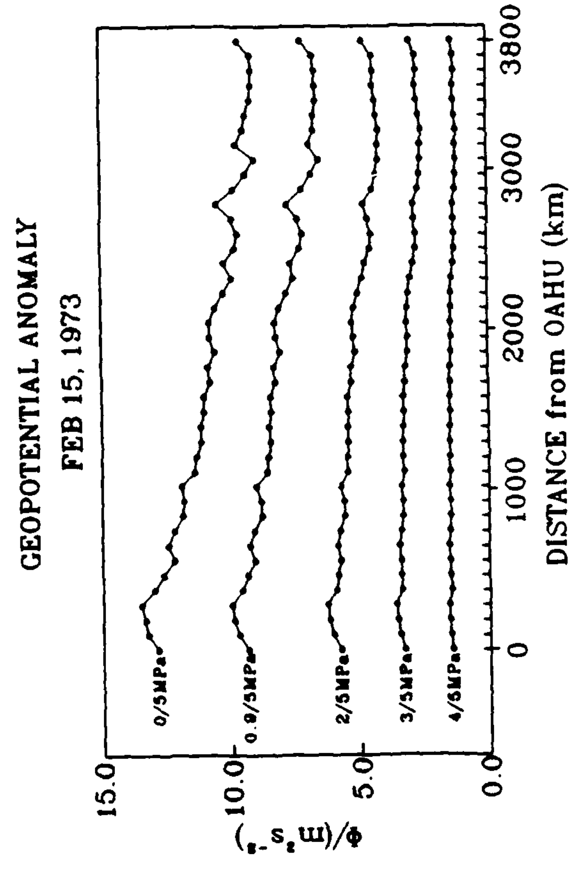
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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4/5MPa
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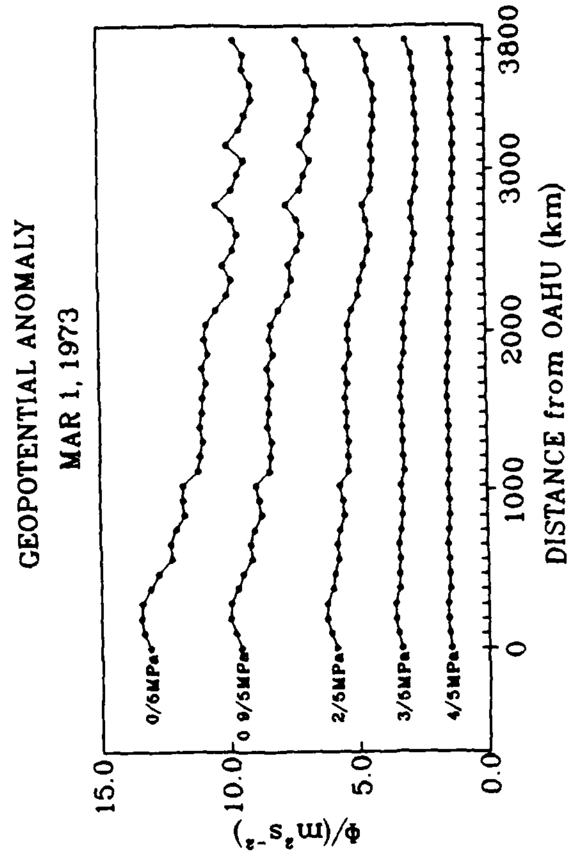
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAR 1, 1973
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
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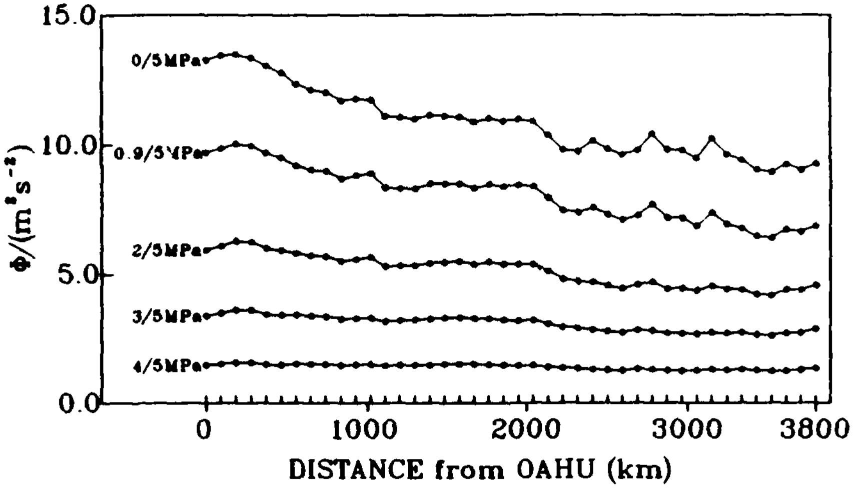
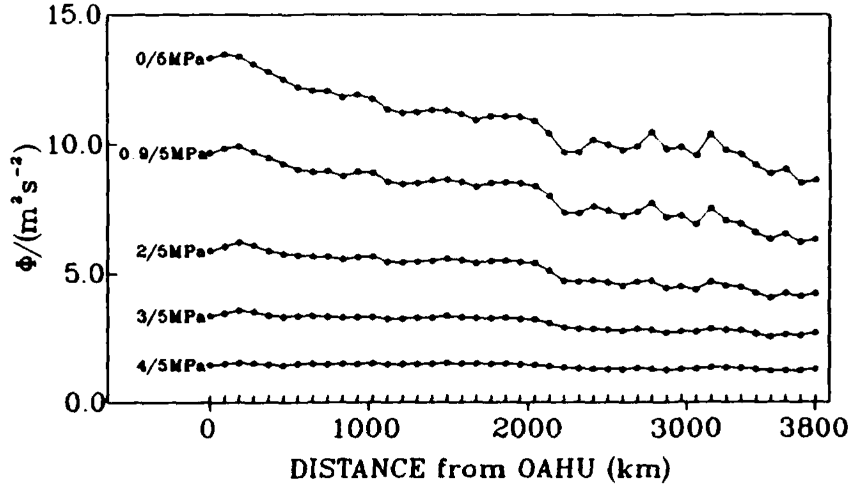
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
MAR 15, 1973



GEOPOTENTIAL ANOMALY
APR 1, 1973



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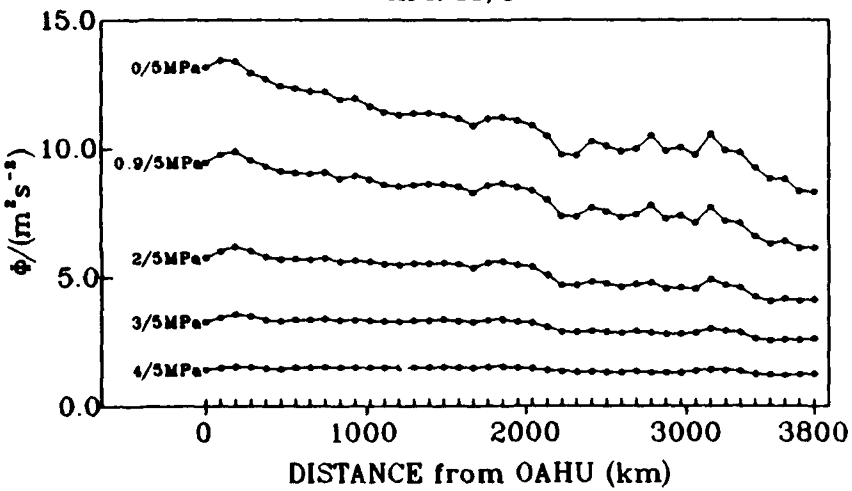
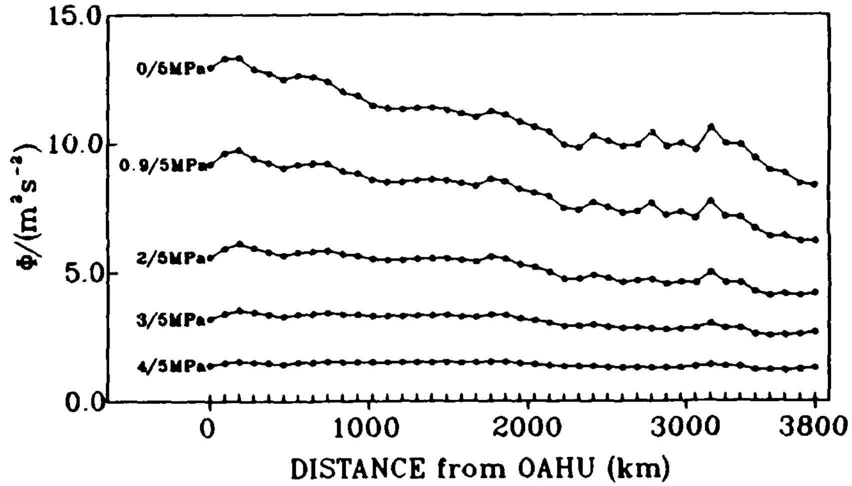


GEOPOTENTIAL ANOMALY
MAY 1, 1973



GEOPOTENTIAL ANOMALY
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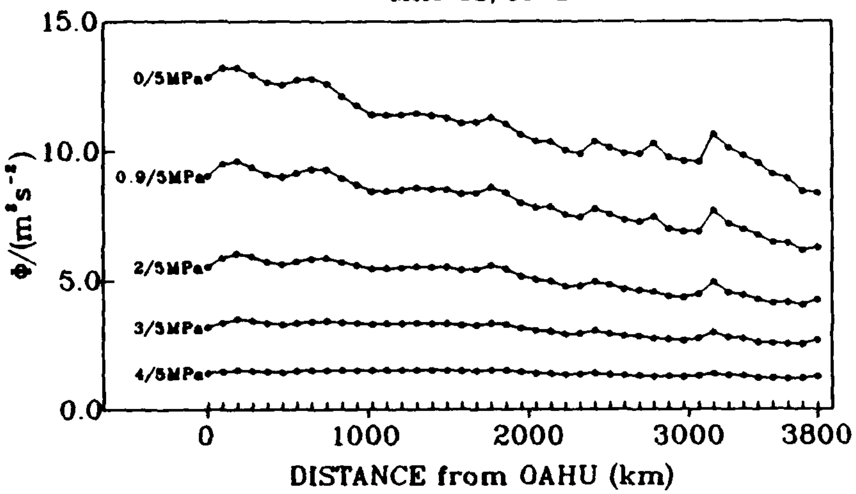

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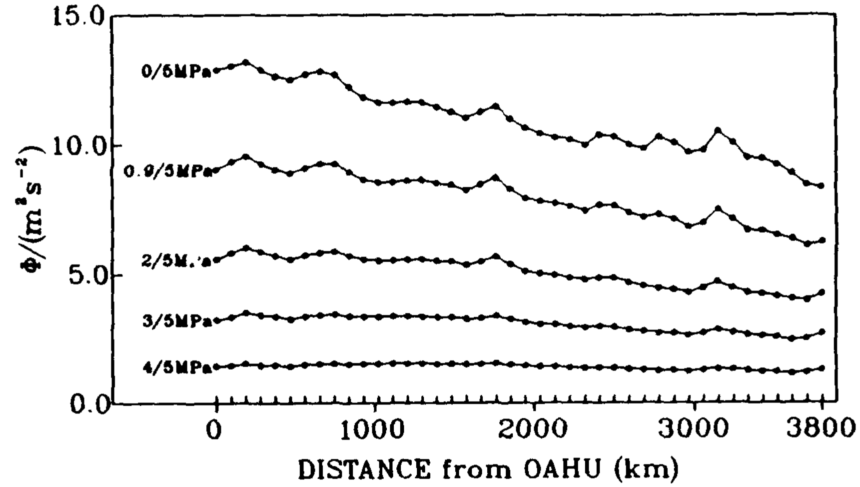

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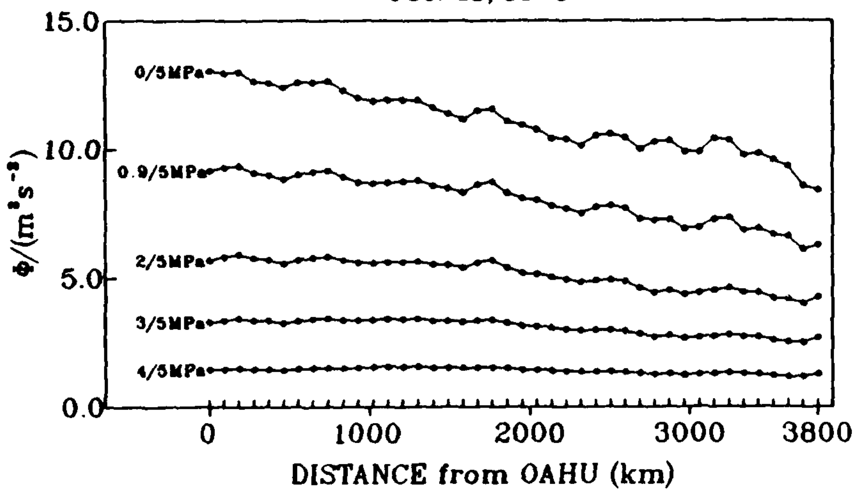

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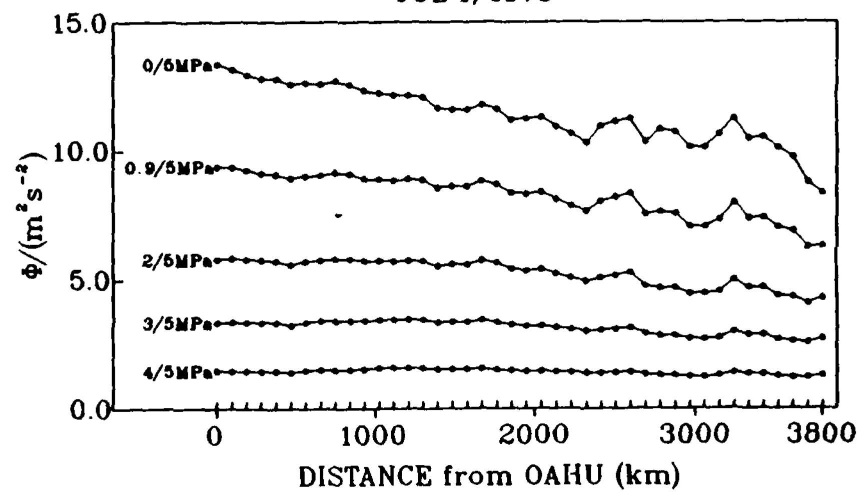

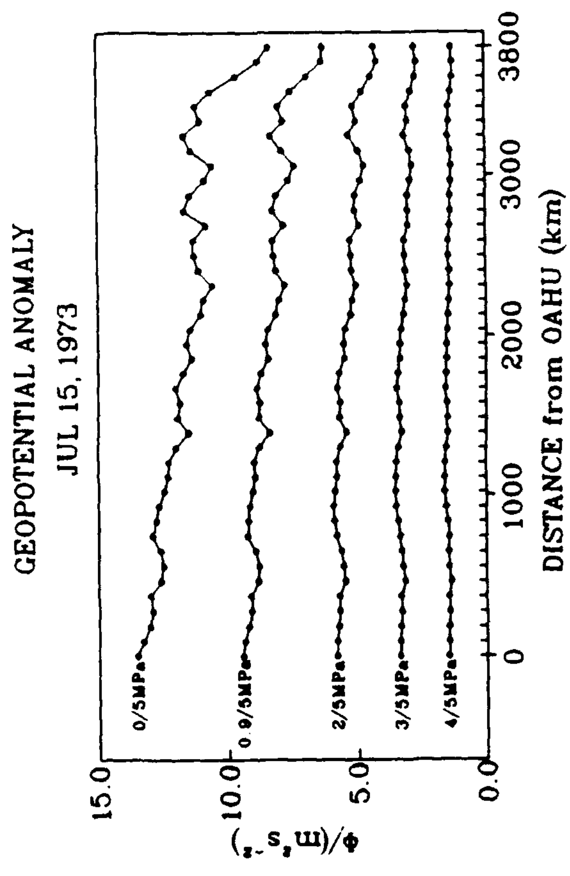
GEOPOTENTIAL ANOMALY
JUL 15, 1973
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0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
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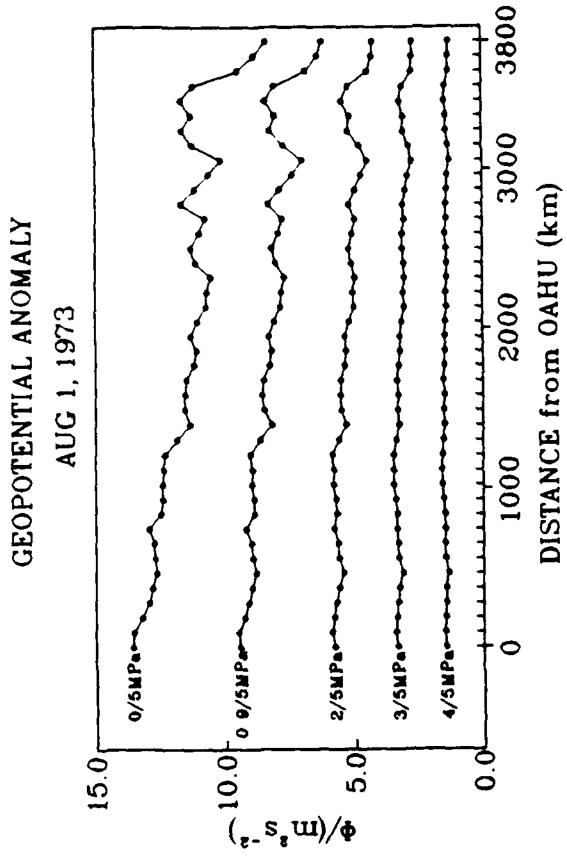
10.0
5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
AUG 1, 1973
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2/5MPa
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4/5MPa
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1000
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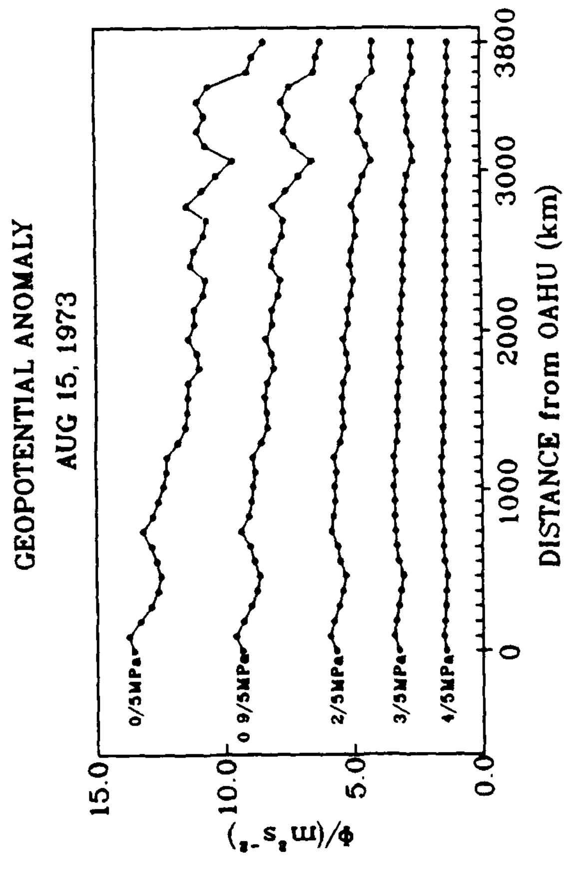
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
AUG 15, 1973
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4/5MPa
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Φ/(m²s⁻²)
0
1000
2000
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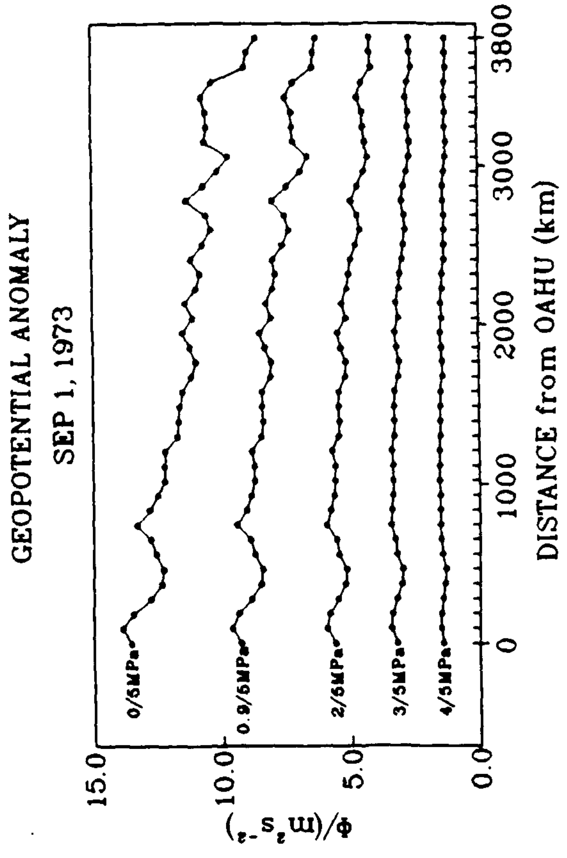
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
SEP 1, 1973
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2/5MPa
3/5MPa
4/5MPa
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Φ/(m²s⁻²)
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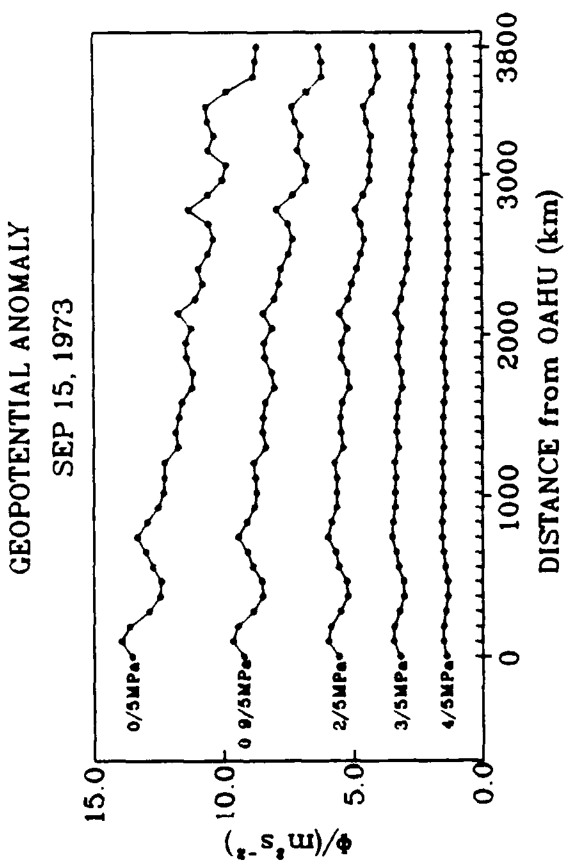
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
SEP 15, 1973
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0.9/5MPa
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4/5MPa
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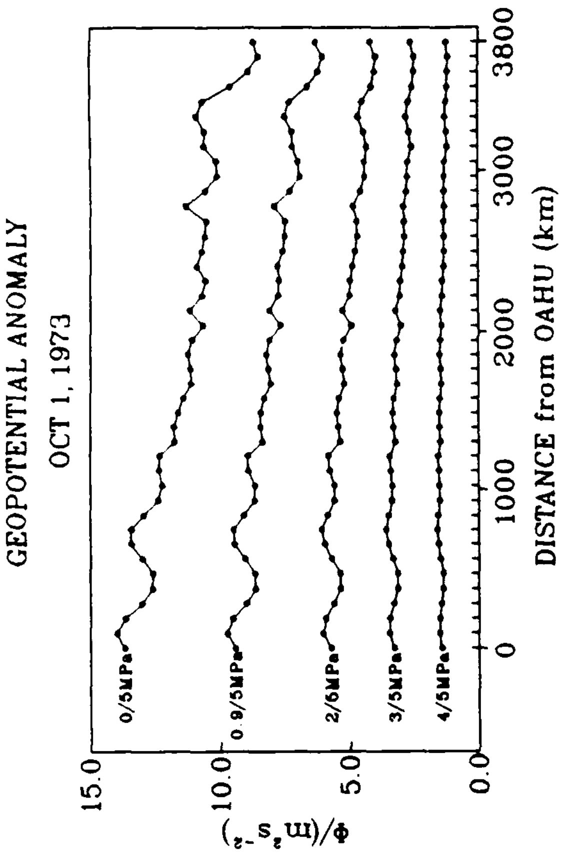
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 1, 1973
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2/5MPa
3/5MPa
4/5MPa
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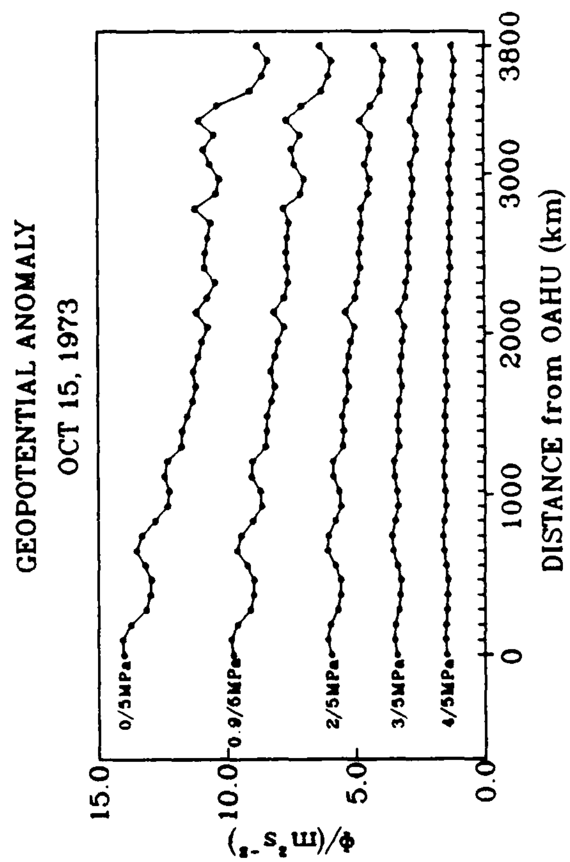
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 15, 1973
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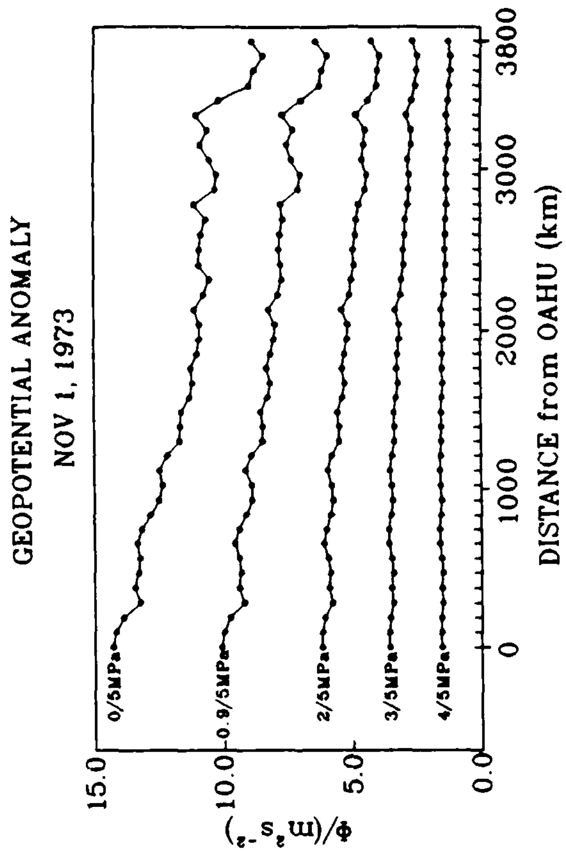
4/5MPa
15.0
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
NOV 1, 1973
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
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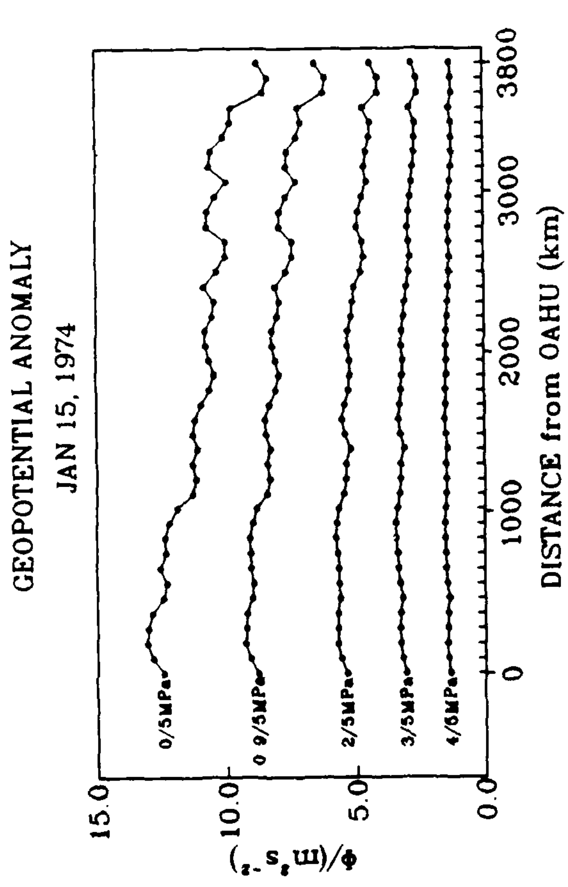
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JAN 15, 1974
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0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
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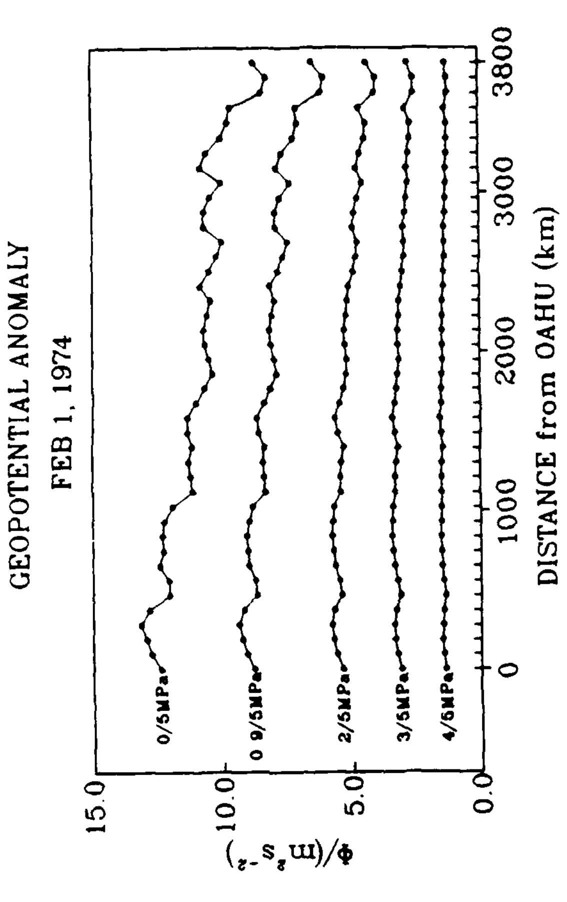
10.0
5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 1, 1974
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0.9/5MPa
2/5MPa
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4/5MPa
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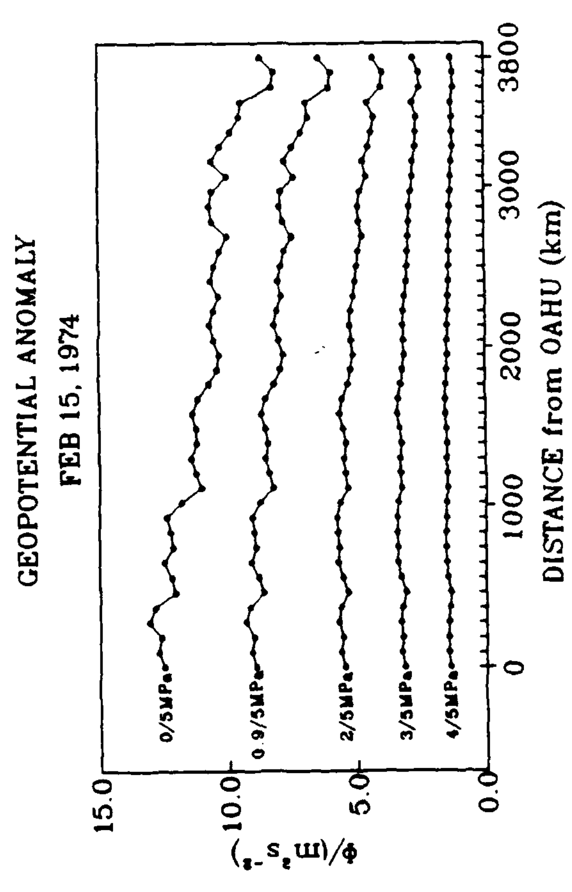
10.0
5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 15, 1974
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3/5MPa
4/5MPa
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5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
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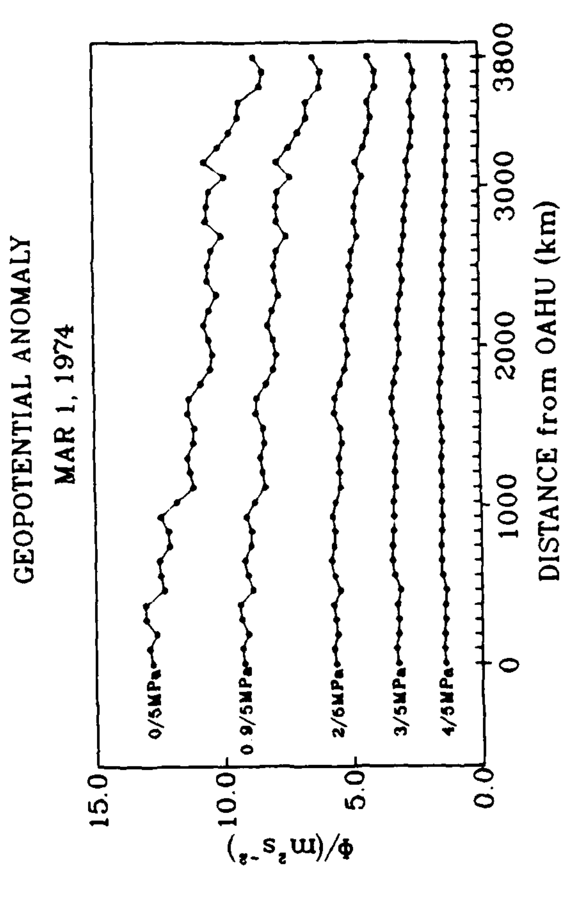
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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4/5MPa
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5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
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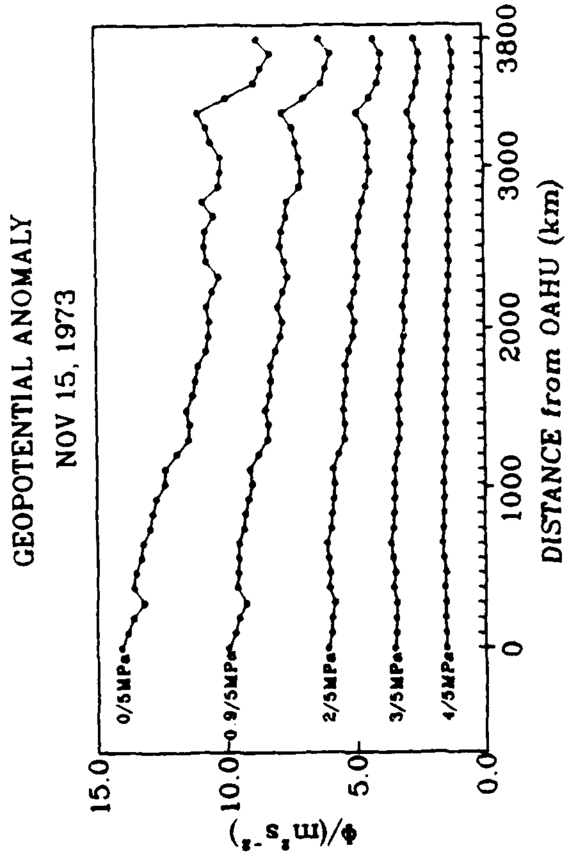
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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Φ/(m²s⁻²)
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0/5MPa
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2/5MPa
3/5MPa
4/5MPa
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1000
2000
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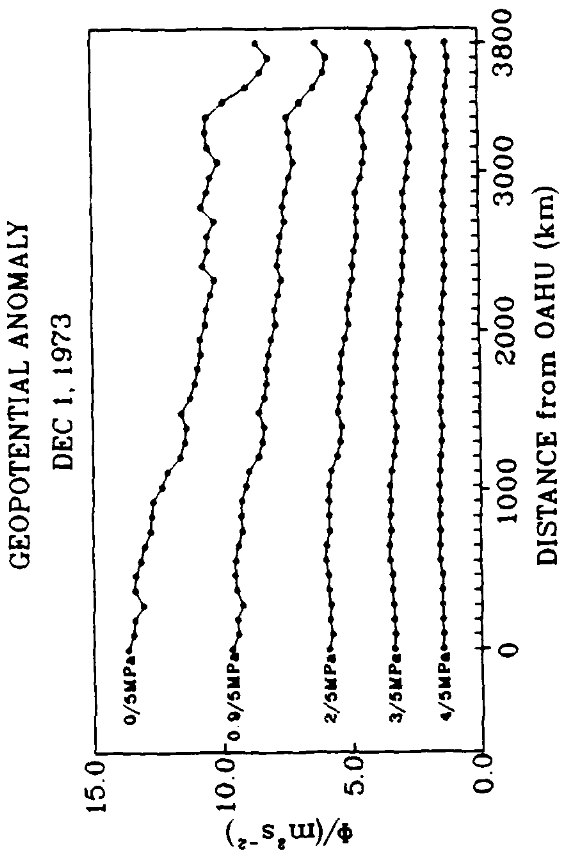
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
DEC 1, 1973
Φ/(m²s⁻²)
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5.0
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0/5MPa
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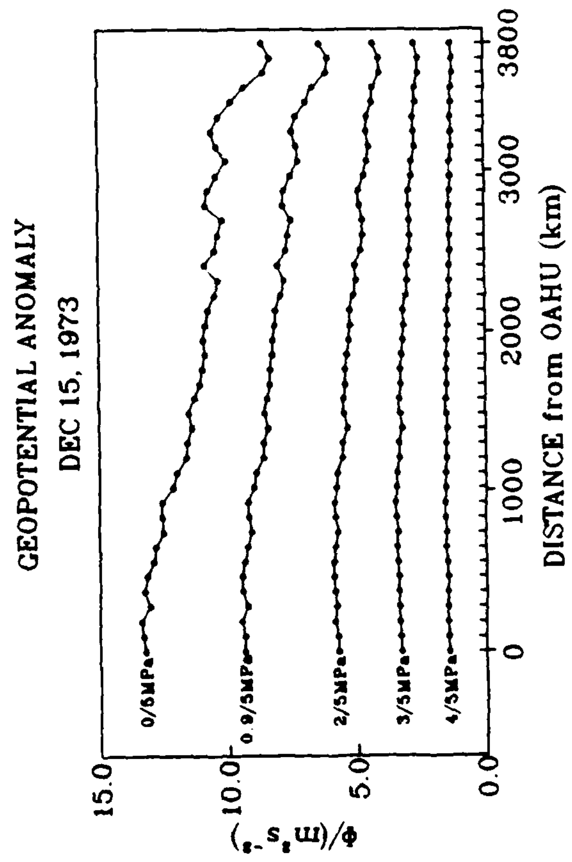
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
DEC 15, 1973
Φ/(m²s⁻²)
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5.0
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0/5MPa
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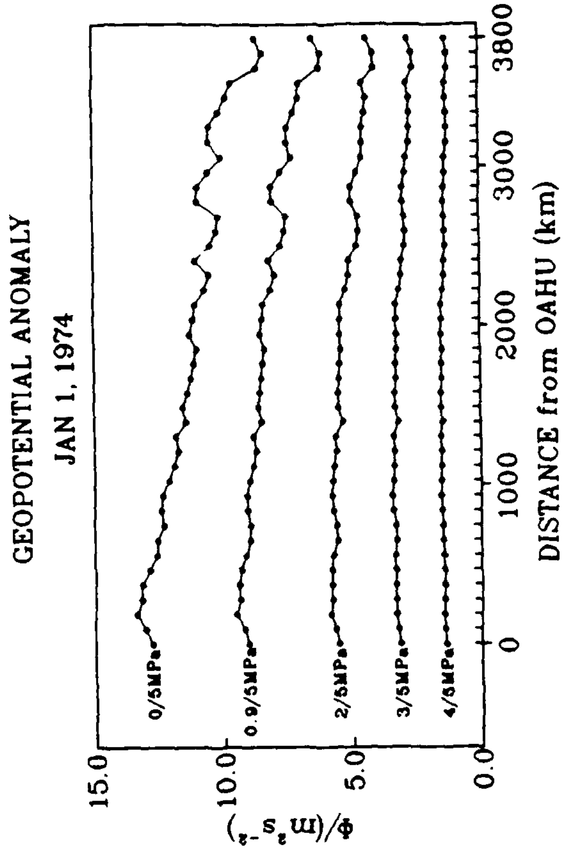
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JAN 1, 1974
Φ/(m²s⁻²)
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10.0
5.0
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0/5MPa
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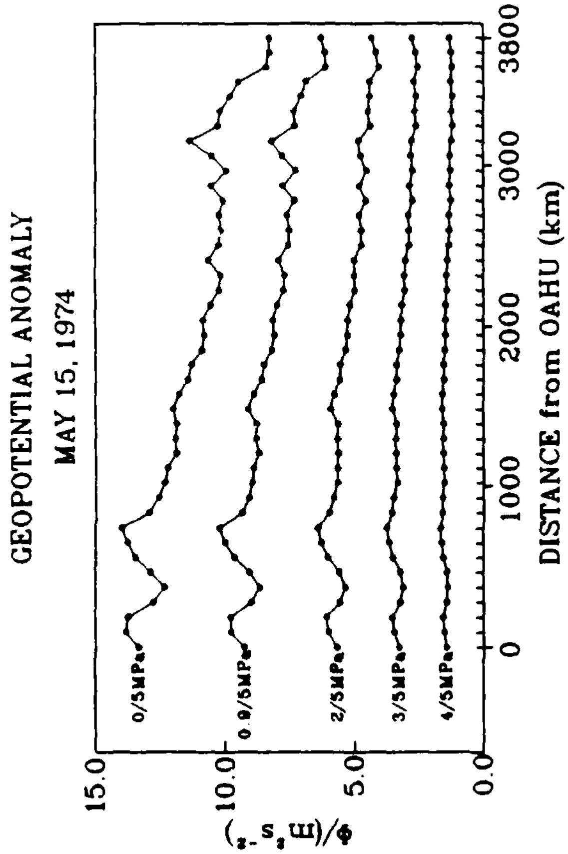
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAY 15, 1974
Φ/(m²s⁻²)
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10.0
5.0
0.0
0/5MPa
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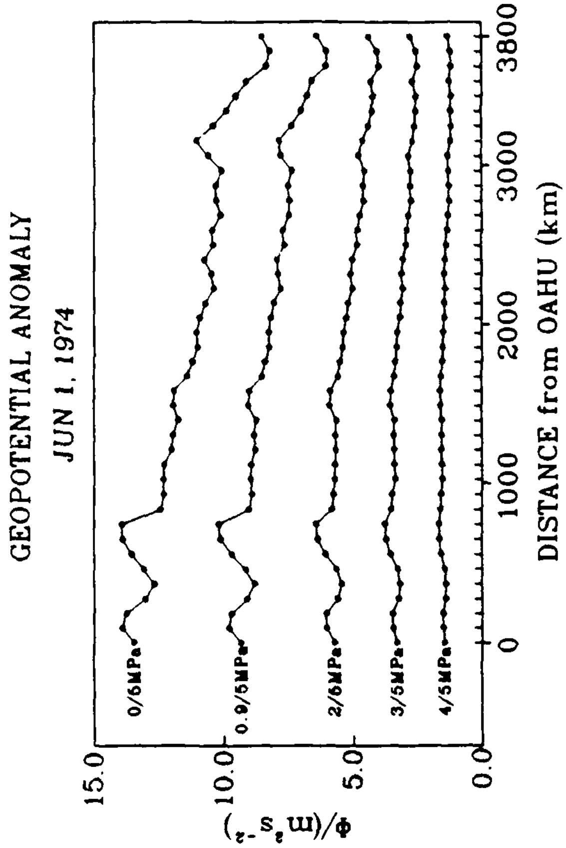
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUN 1, 1974
Φ/(m²s⁻²)
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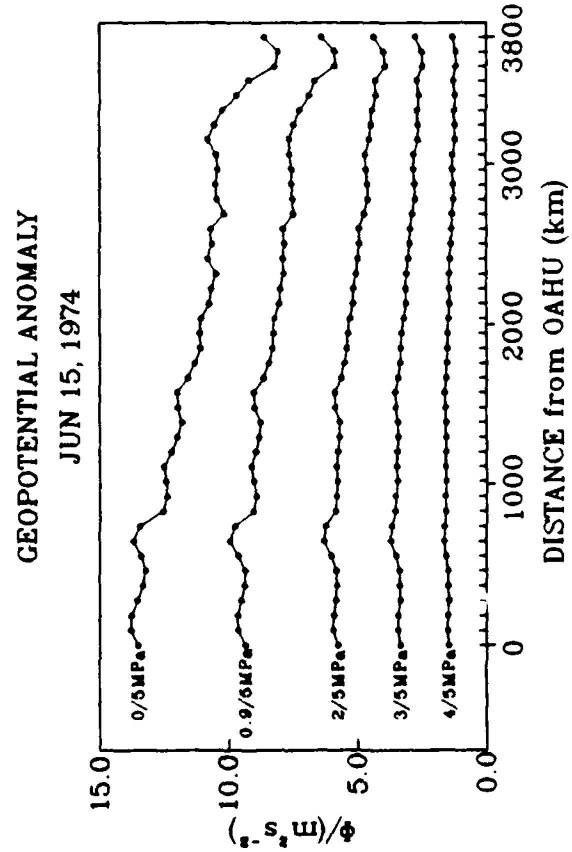
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUN 15, 1974
Φ/(m²s⁻²)
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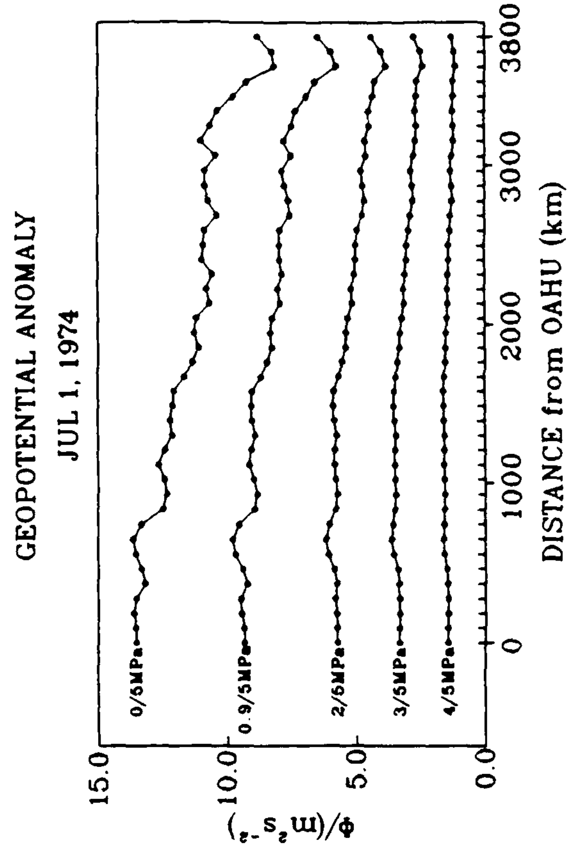
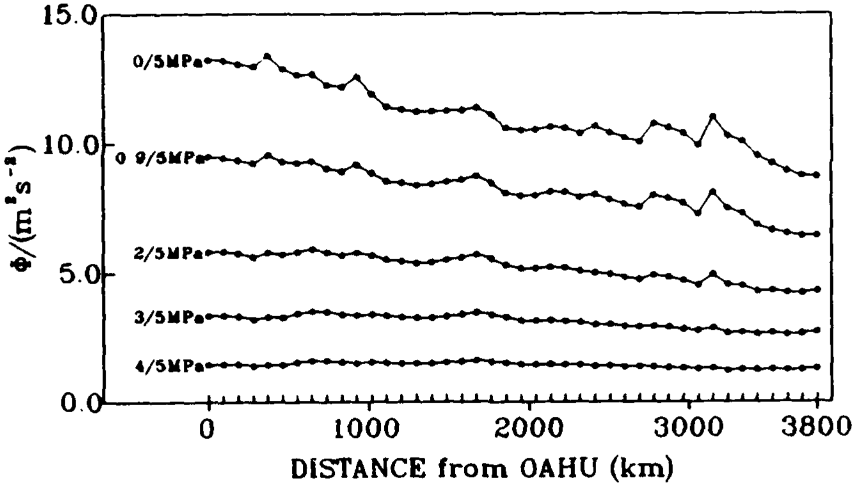
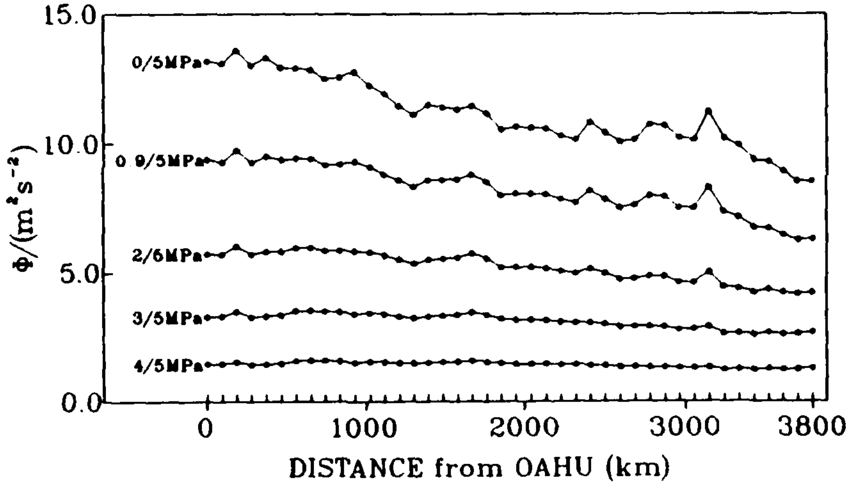
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUL 1, 1974
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

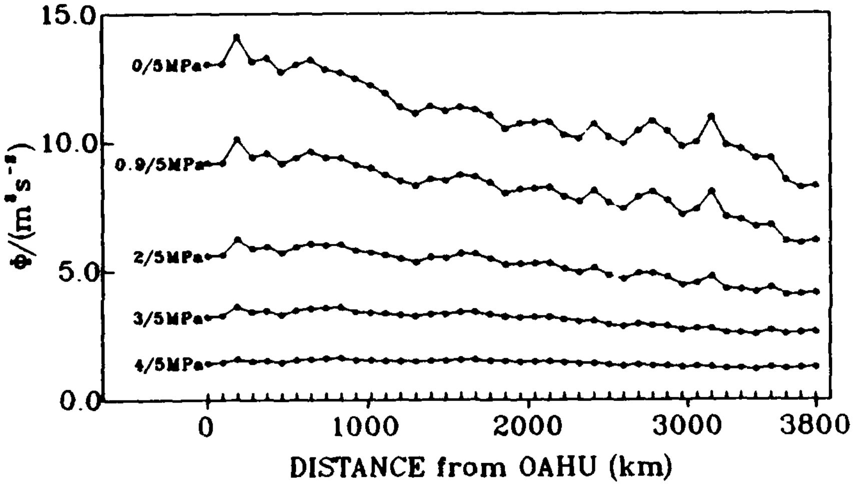
GEOPOTENTIAL ANOMALY
MAR 15, 1974



GEOPOTENTIAL ANOMALY
APR 1, 1974



GEOPOTENTIAL ANOMALY
APR 15, 1974



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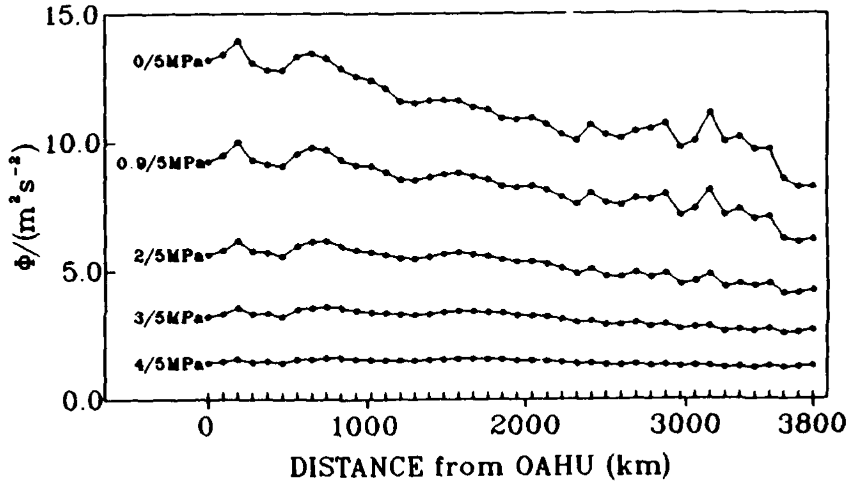
MAY 1, 1974



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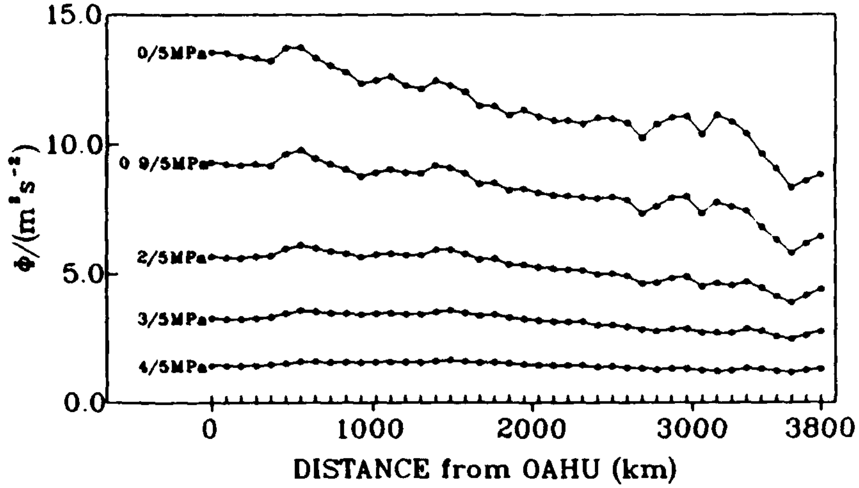
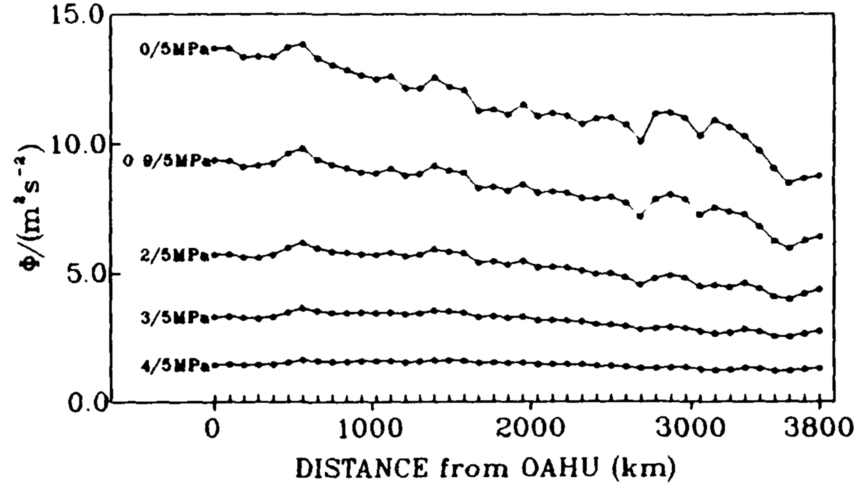


GEOPOTENTIAL ANOMALY
AUG 1, 1974



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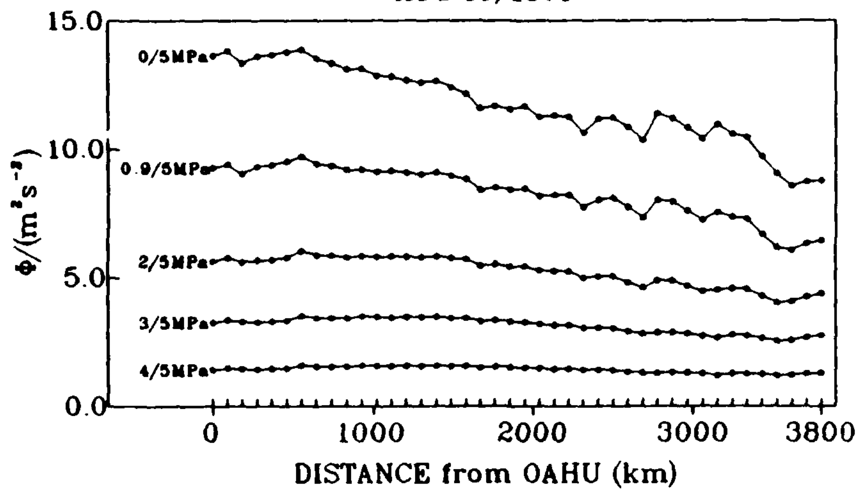
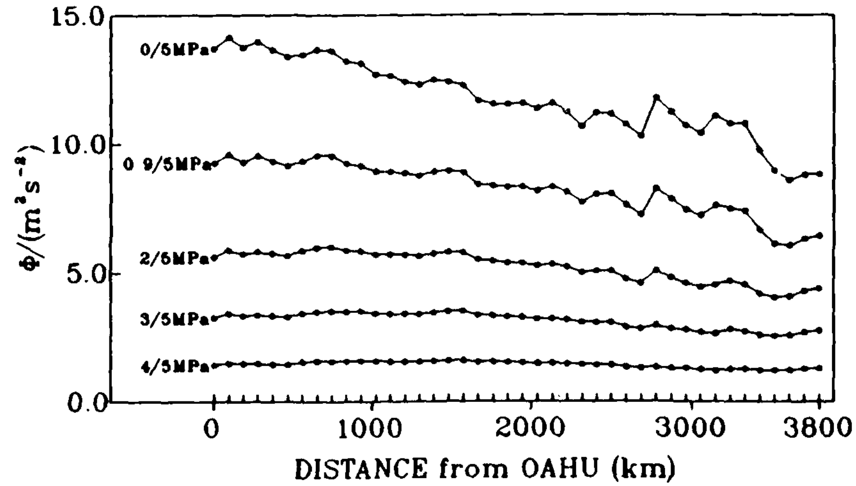


GEOPOTENTIAL ANOMALY
SEP 1, 1974



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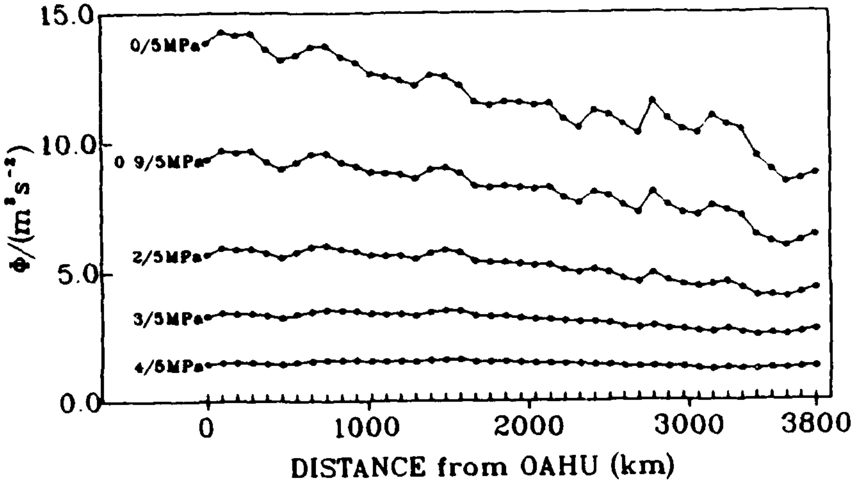

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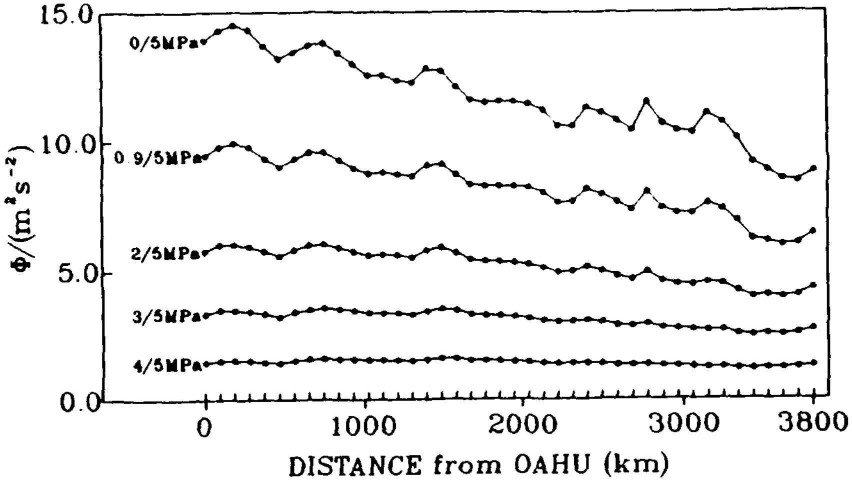
OCT 1, 1974



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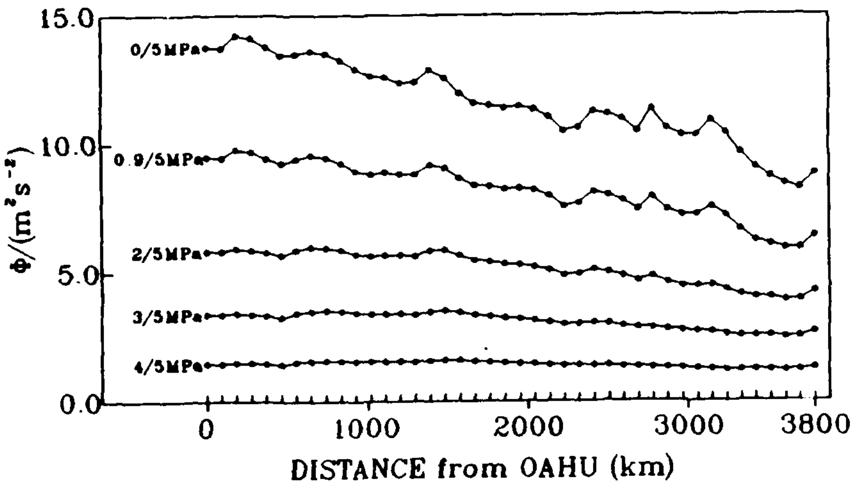

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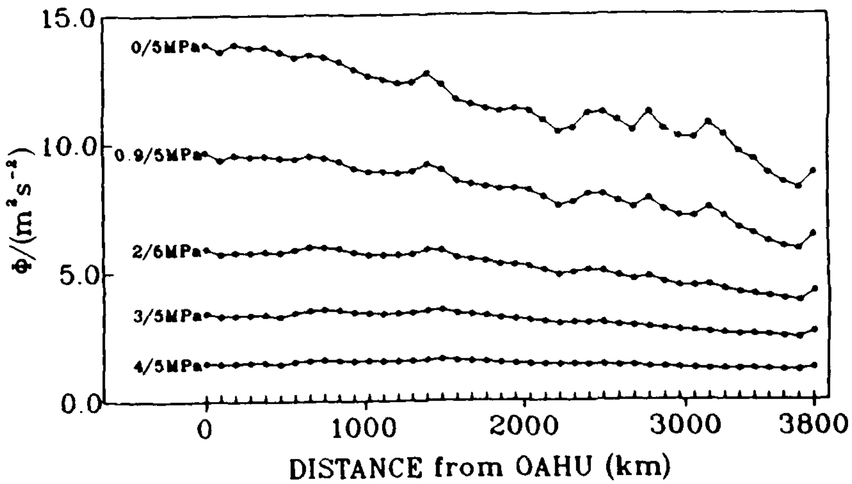

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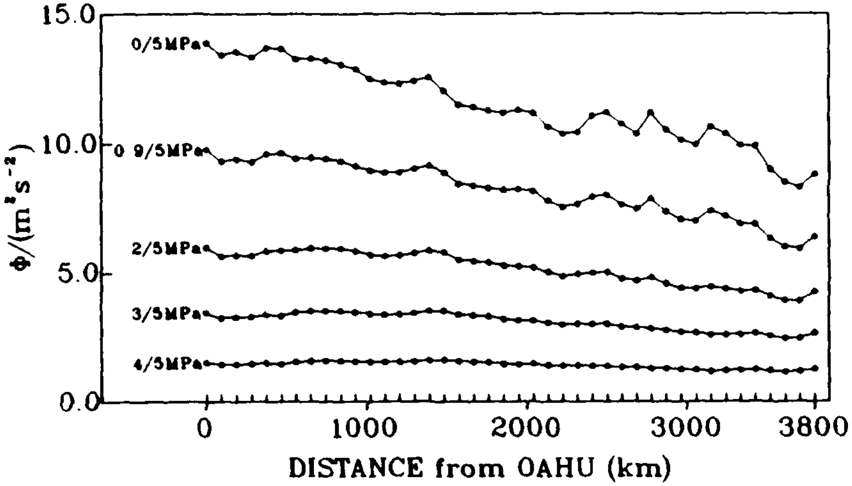

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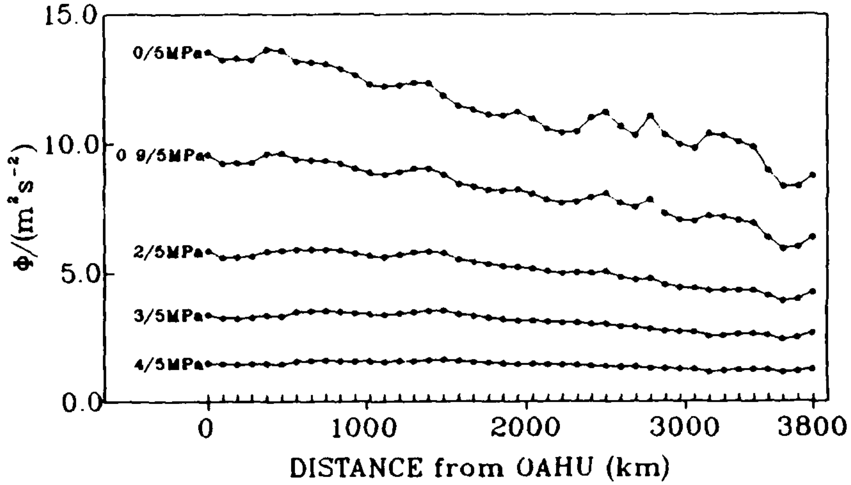

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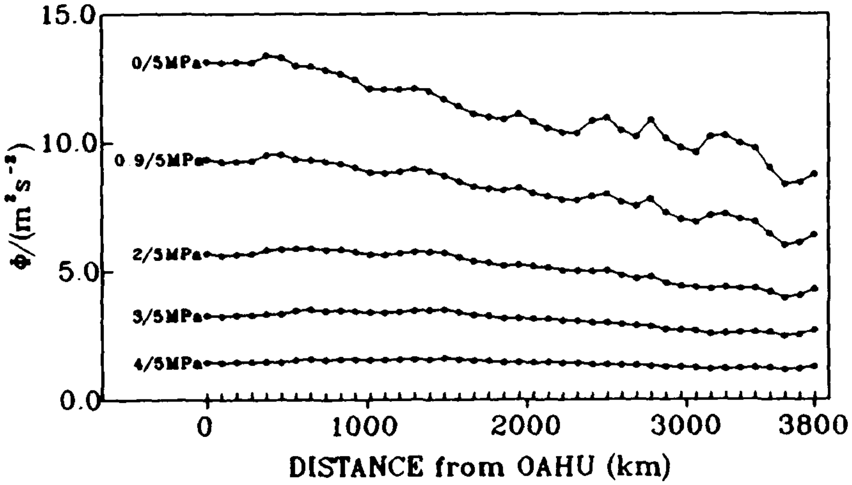
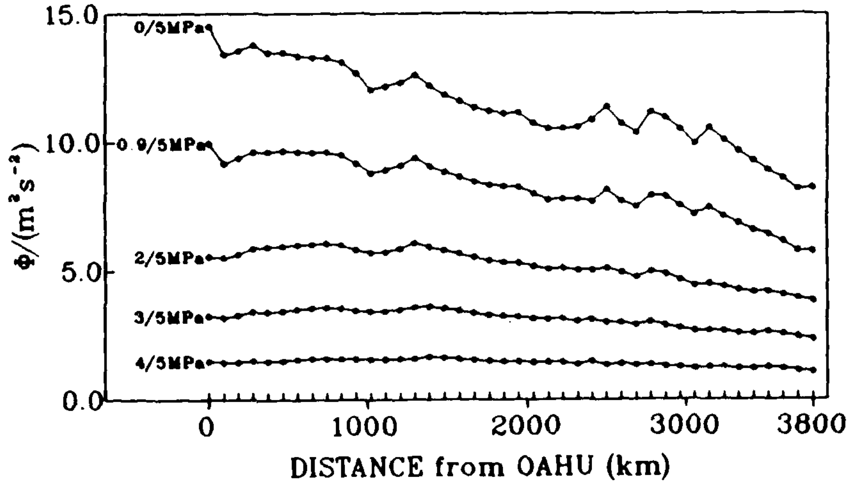


GEOPOTENTIAL ANOMALY
JAN 1, 1975



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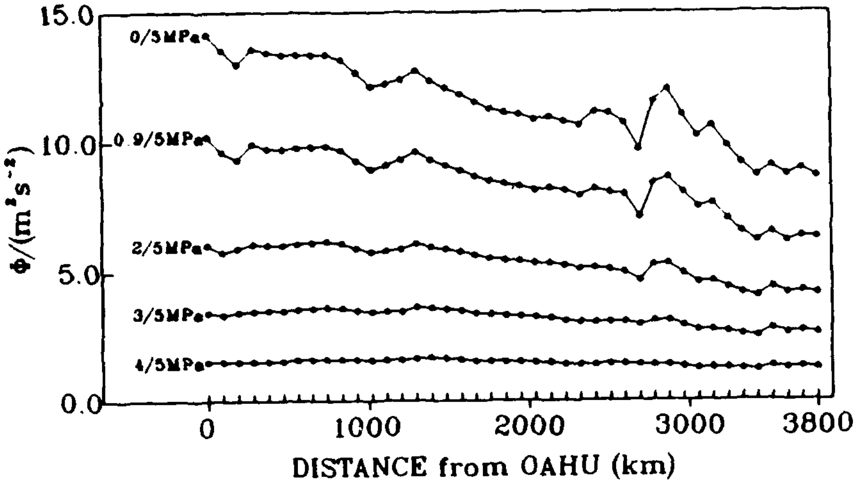

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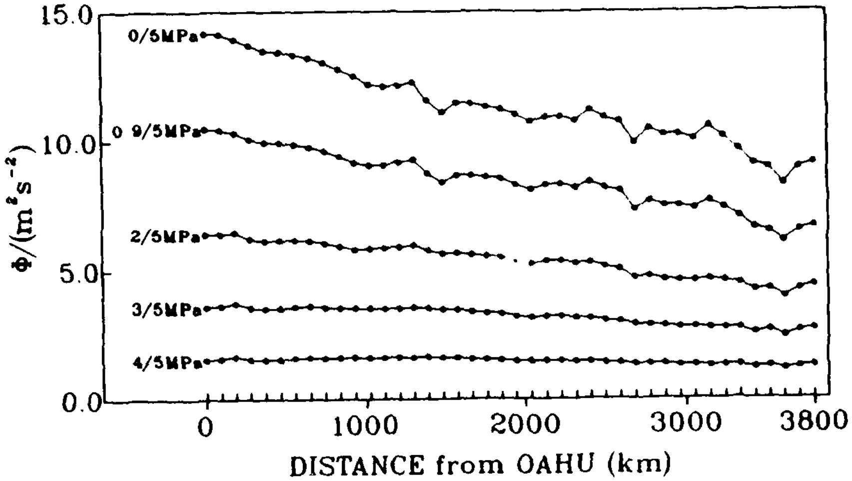

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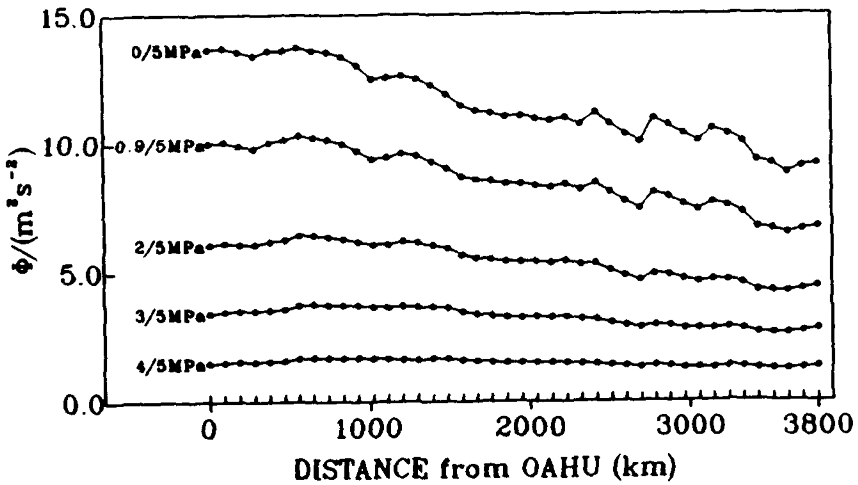
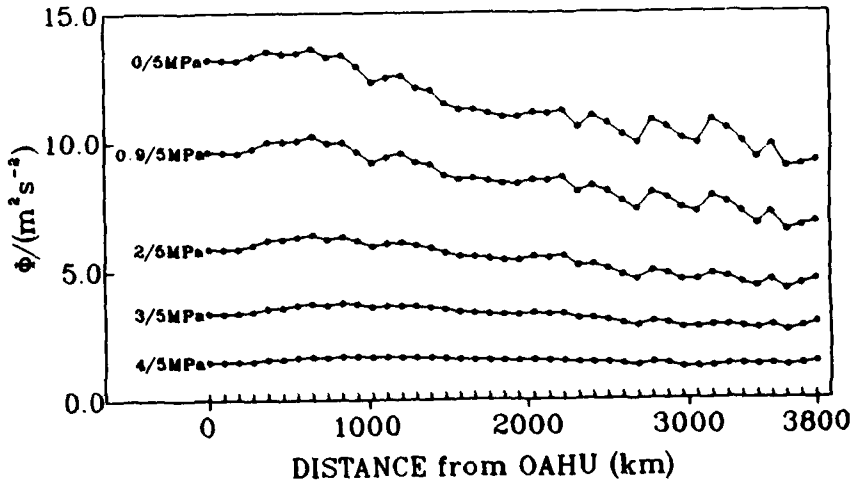
FEB 15, 1975



GEOPOTENTIAL ANOMALY
MAR 1, 1975



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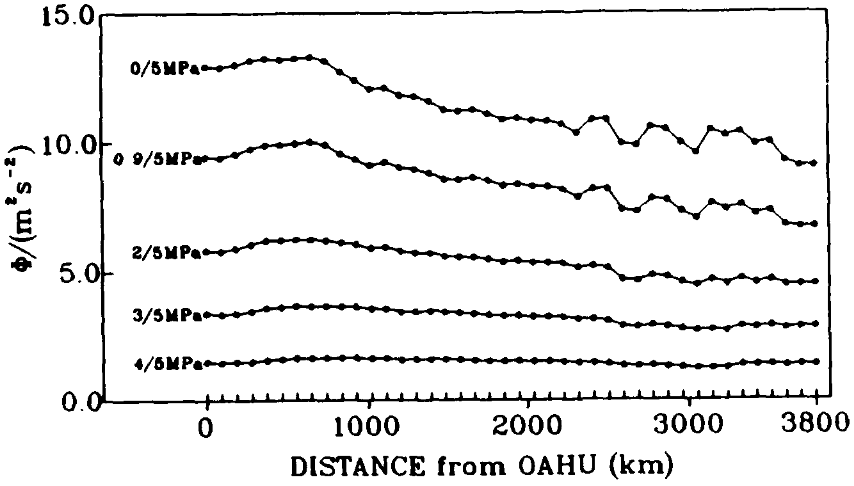

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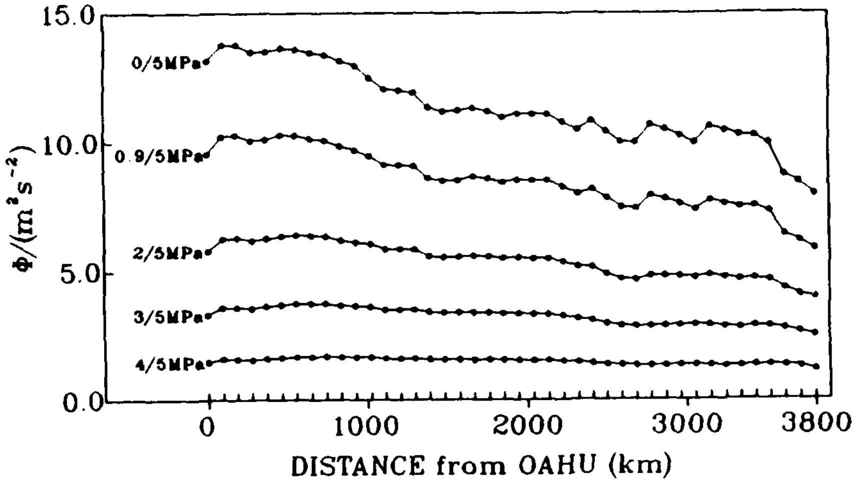

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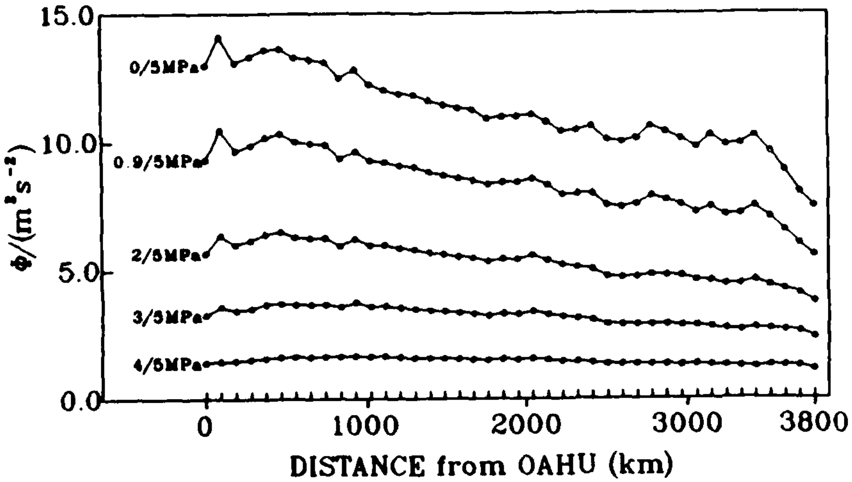
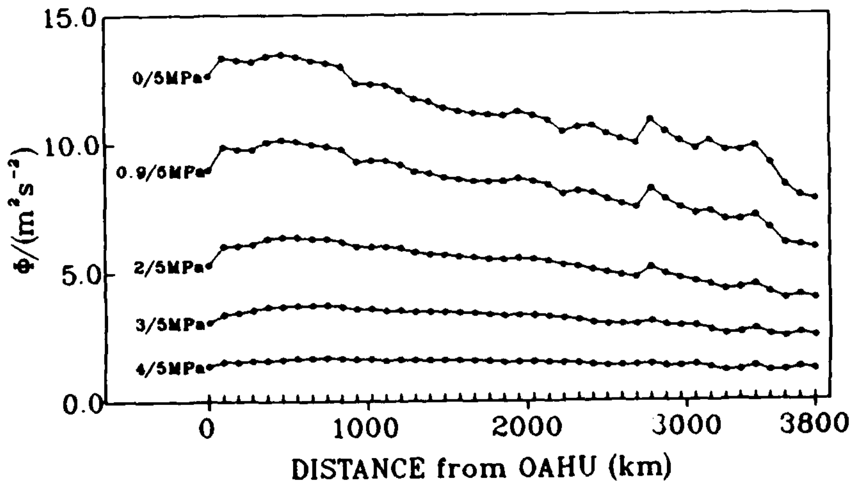
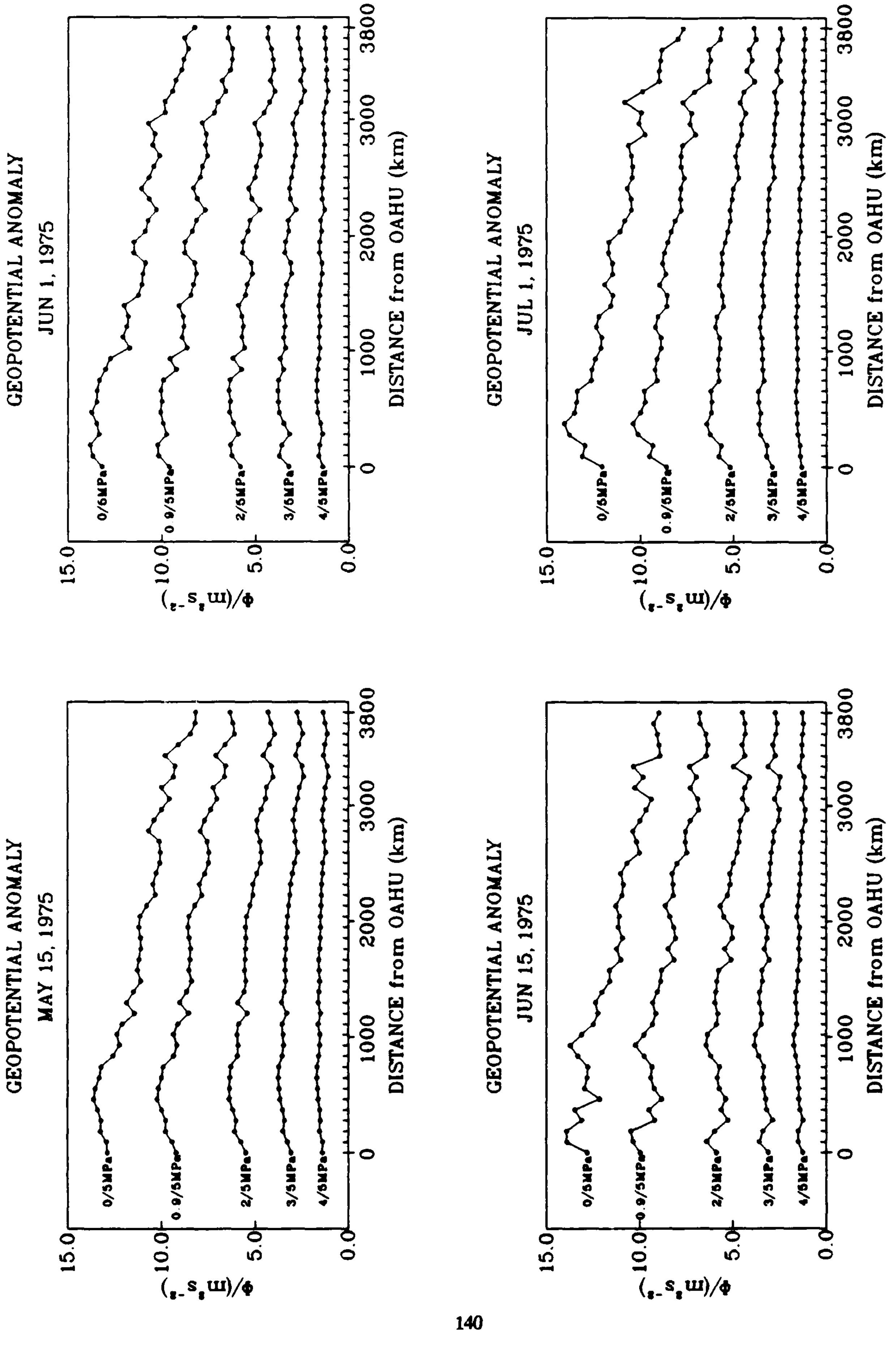
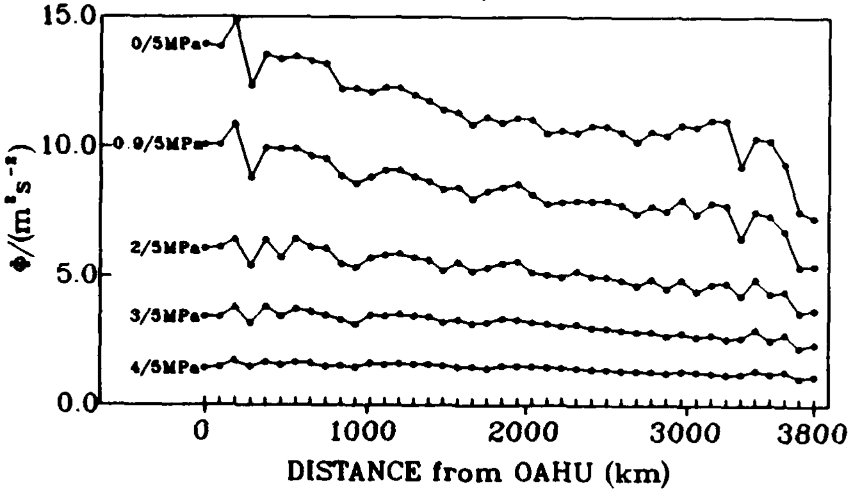


GEOPOTENTIAL ANOMALY
MAY 1, 1975




GEOPOTENTIAL ANOMALY
MAY 15, 1975
GEOPOTENTIAL ANOMALY
JUN 1, 1975
GEOPOTENTIAL ANOMALY
JUN 15, 1975
GEOPOTENTIAL ANOMALY
JUL 1, 1975
DISTANCE from OAHU (km)
$\Phi/(m^2 s^{-2})$
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
0.0
5.0
10.0
15.0

GEOPOTENTIAL ANOMALY
JUL 15, 1975



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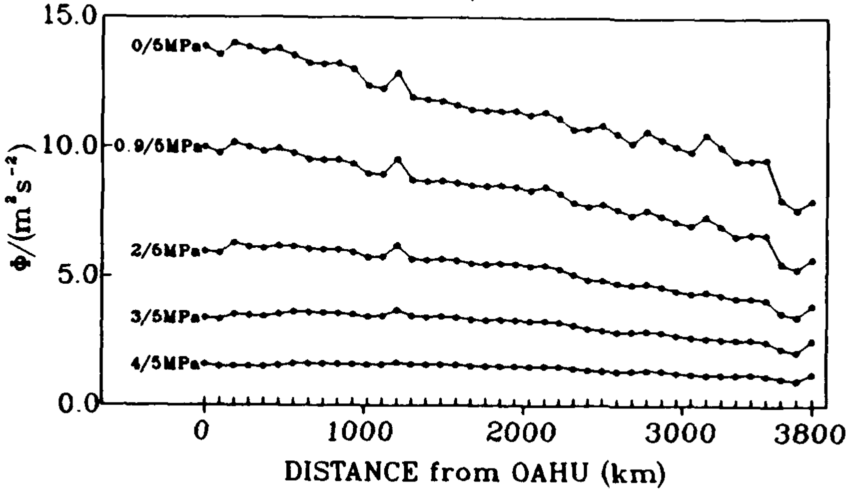
AUG 1, 1975



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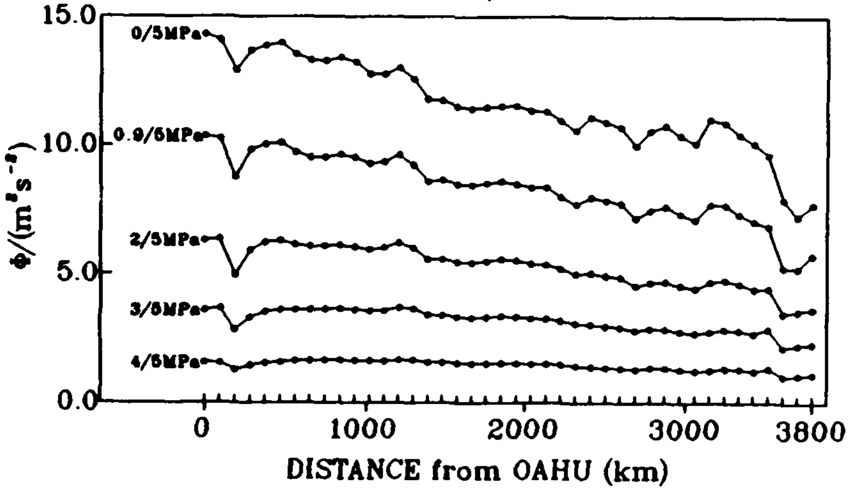

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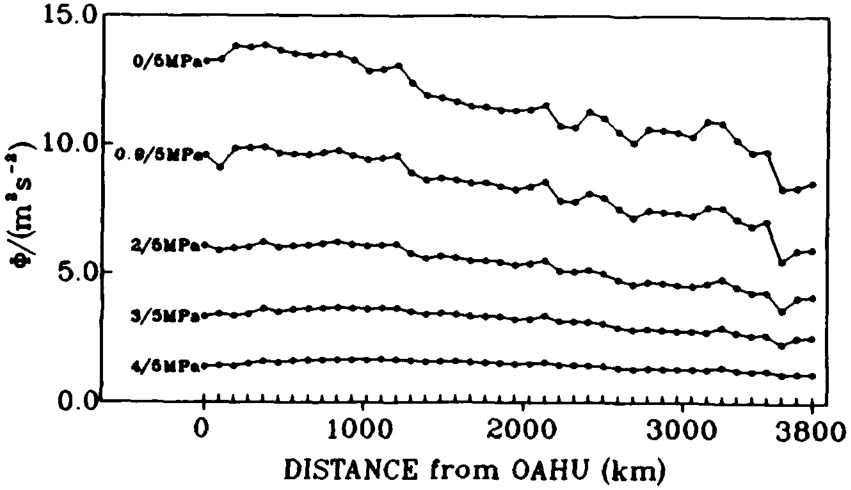
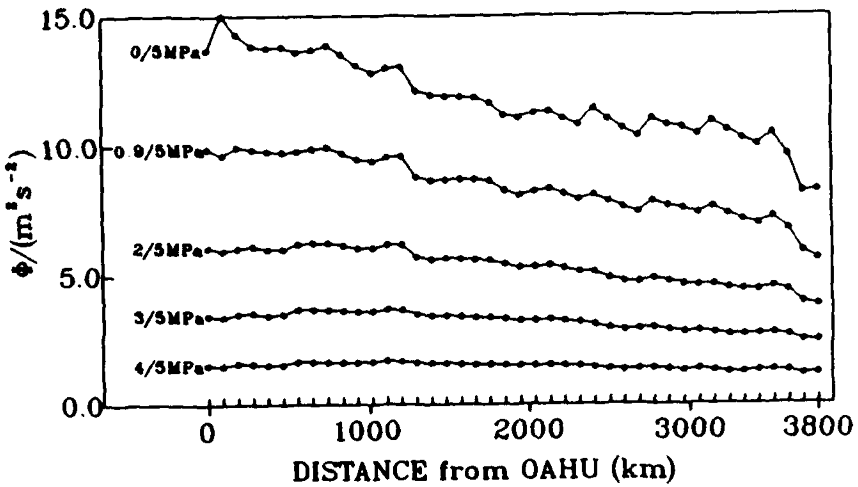
SEP 1, 1975



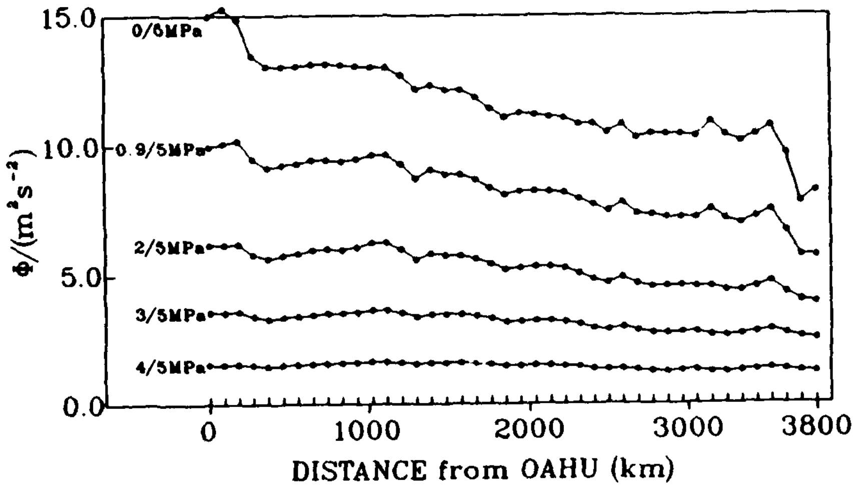
GEOPOTENTIAL ANOMALY

SEP 15, 1975



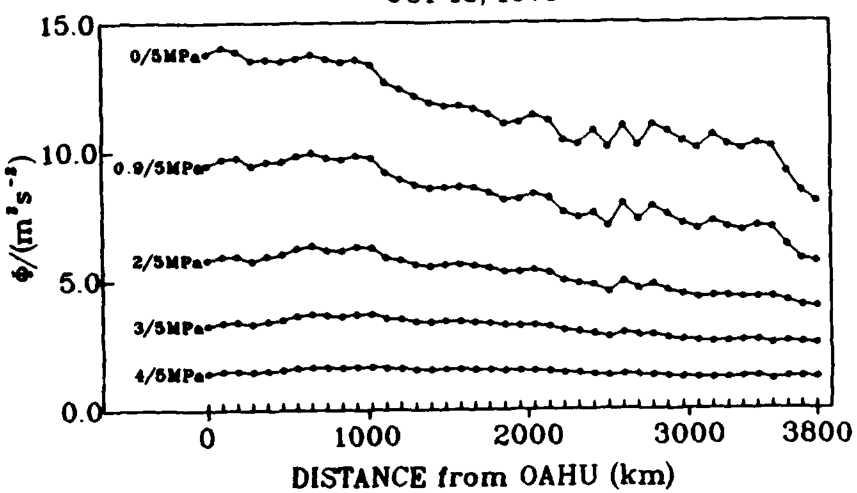
GEOPOTENTIAL ANOMALY

OCT 1, 1975



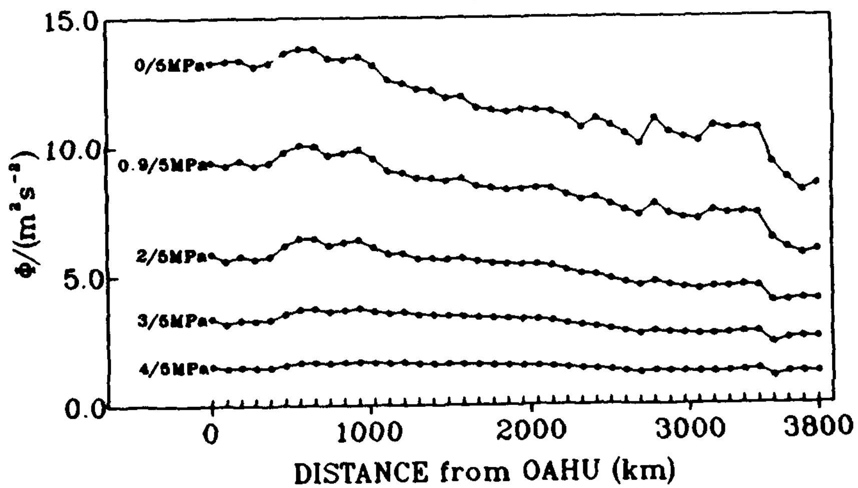
GEOPOTENTIAL ANOMALY

OCT 15, 1975



GEOPOTENTIAL ANOMALY

NOV 1, 1975



GEOPOTENTIAL ANOMALY
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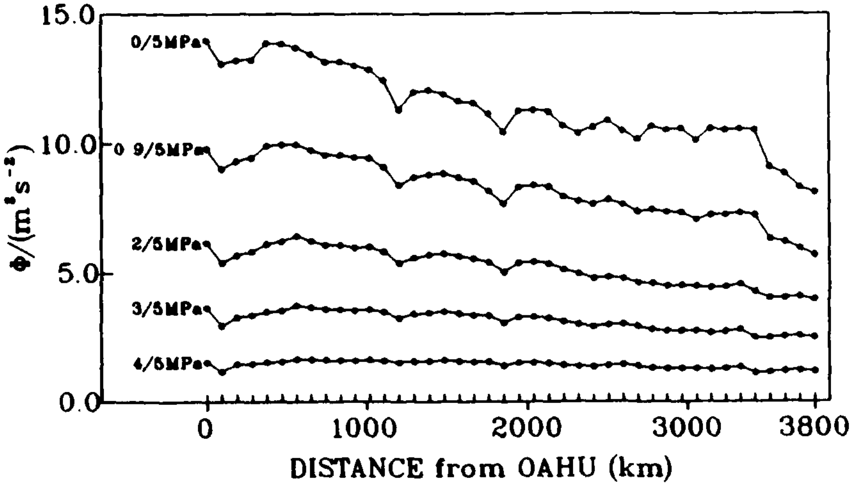
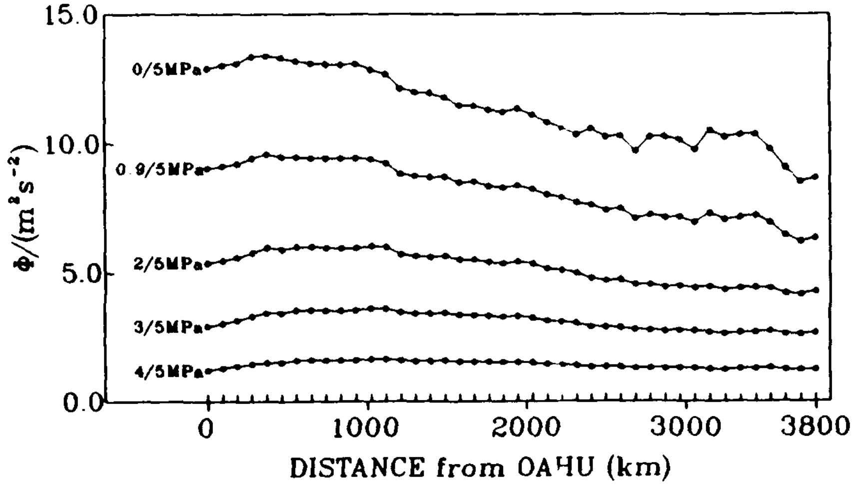


GEOPOTENTIAL ANOMALY
DEC 1, 1975



GEOPOTENTIAL ANOMALY
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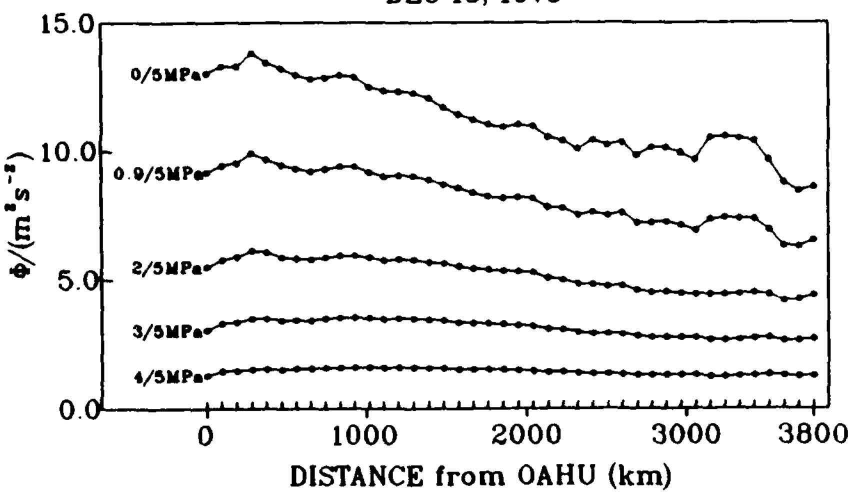
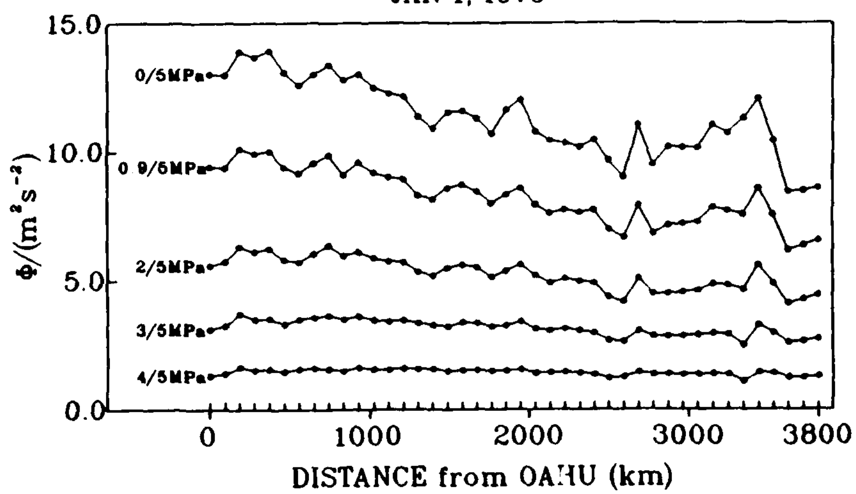
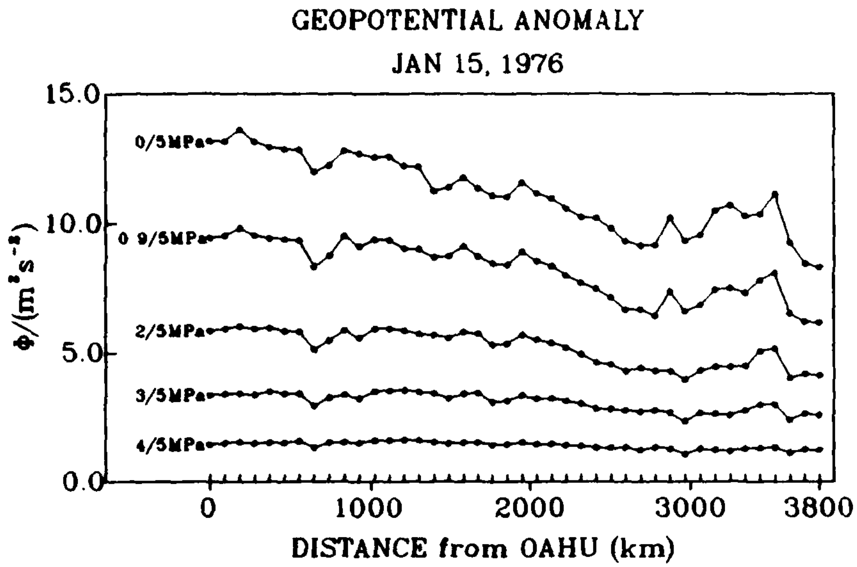
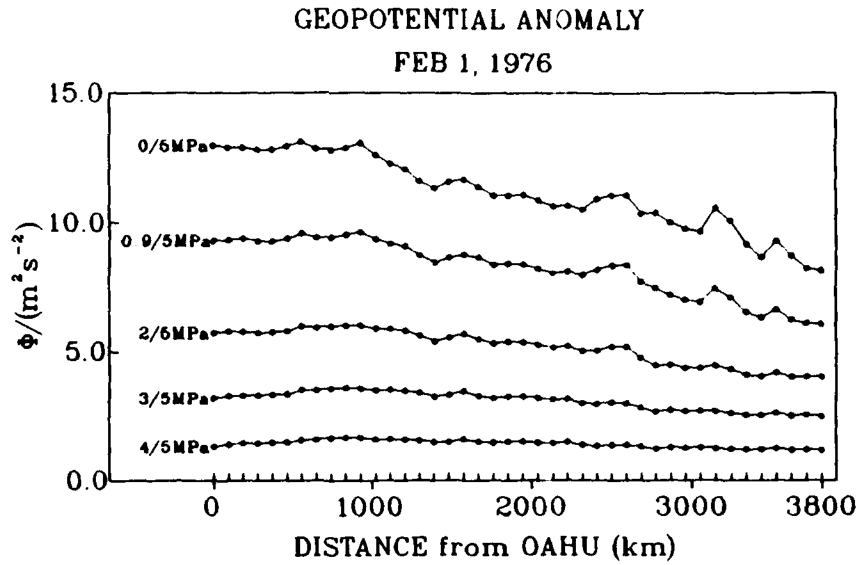


GEOPOTENTIAL ANOMALY
JAN 1, 1976




GEOPOTENTIAL ANOMALY
JAN 15, 1976
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
Φ/(m²s⁻²)
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 1, 1976
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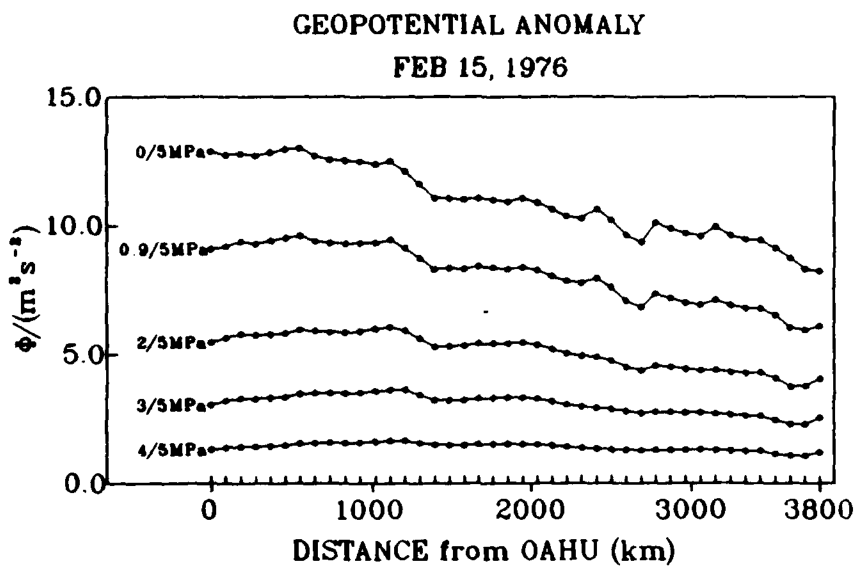
Φ/(m²s⁻²)
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 15, 1976
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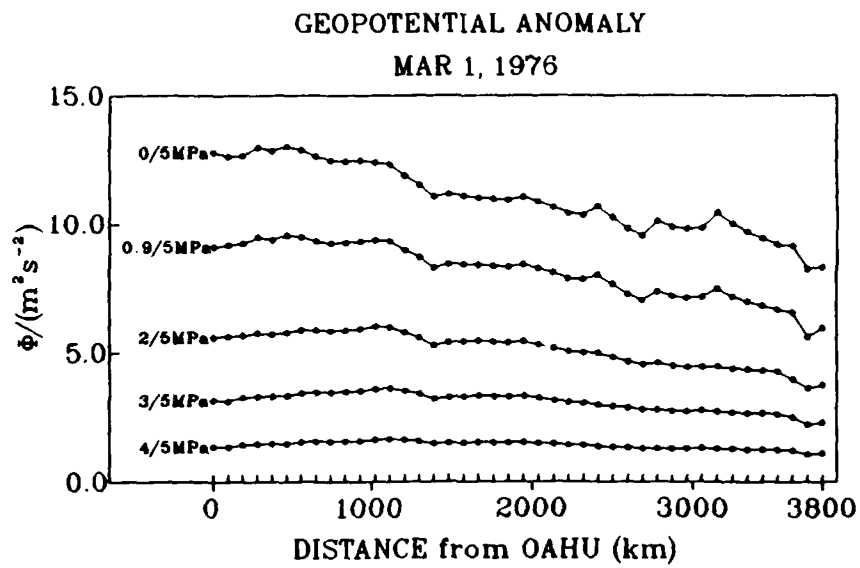
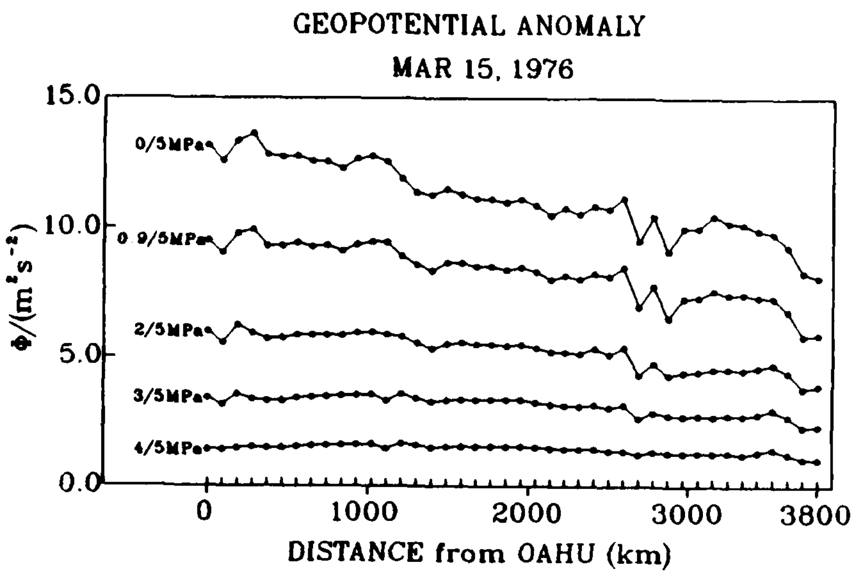
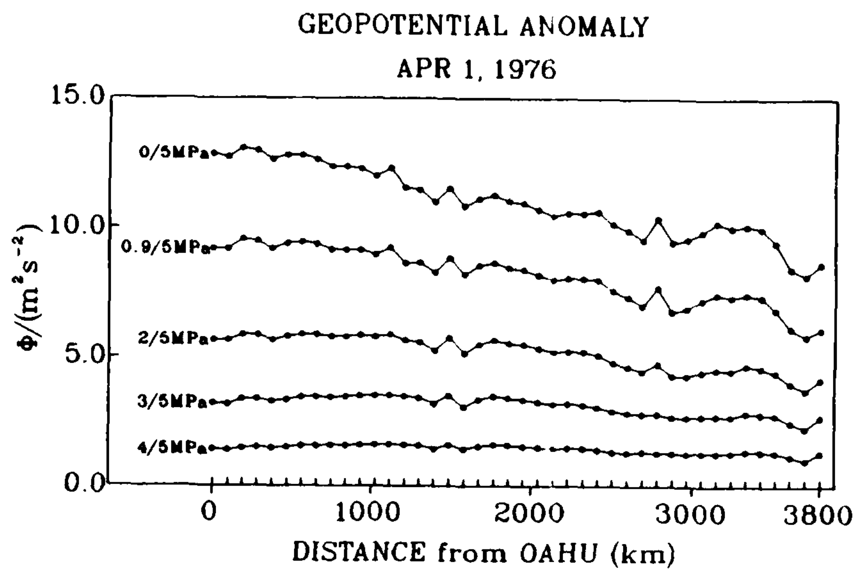
Φ/(m²s⁻²)
DISTANCE from OAHU (km)

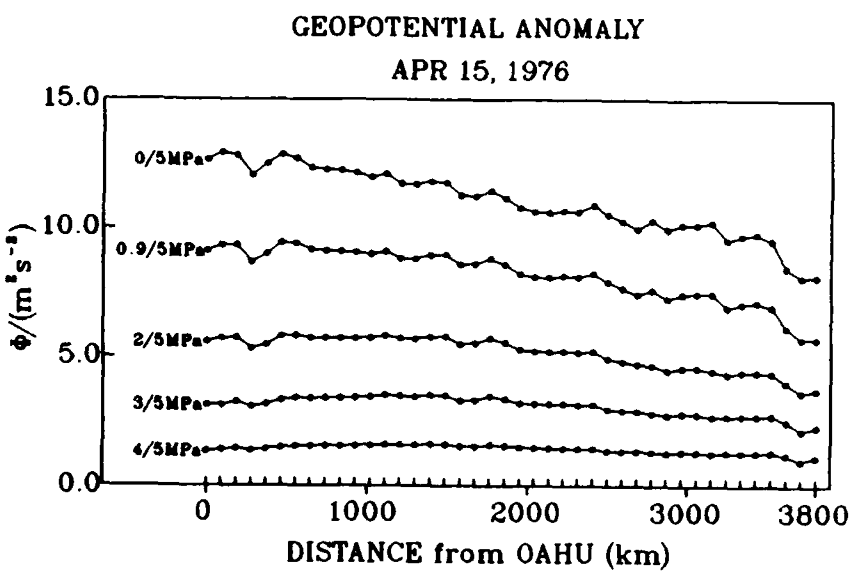

GEOPOTENTIAL ANOMALY
MAR 1, 1976
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
Φ/(m²s⁻²)
DISTANCE from OAHU (km)



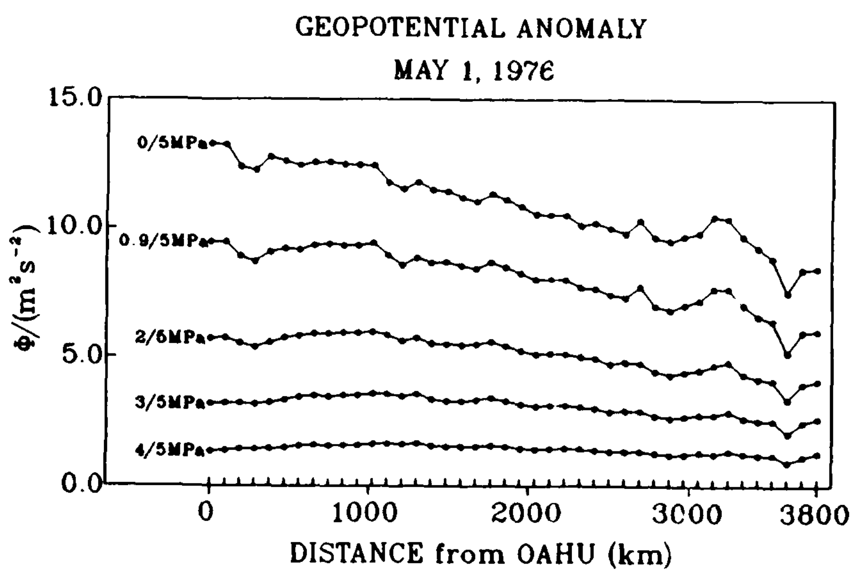
GEOPOTENTIAL ANOMALY
MAR 15, 1976
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)



GEOPOTENTIAL ANOMALY
APR 1, 1976
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

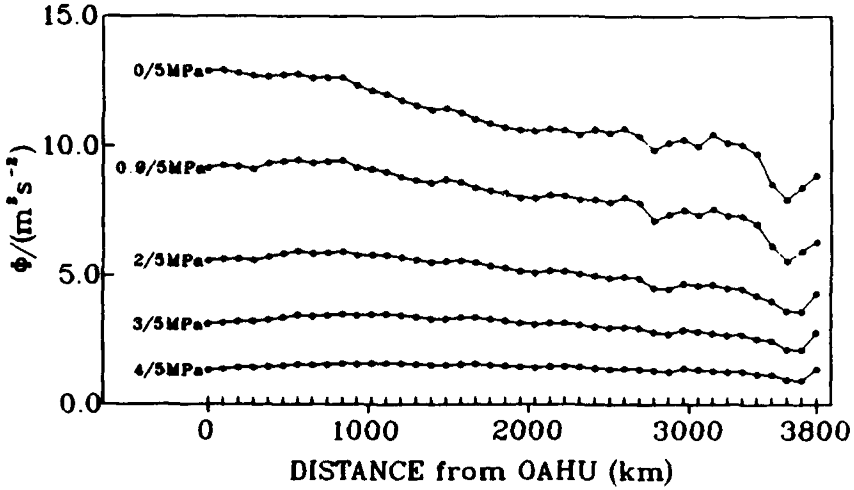


GEOPOTENTIAL ANOMALY
APR 15, 1976
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

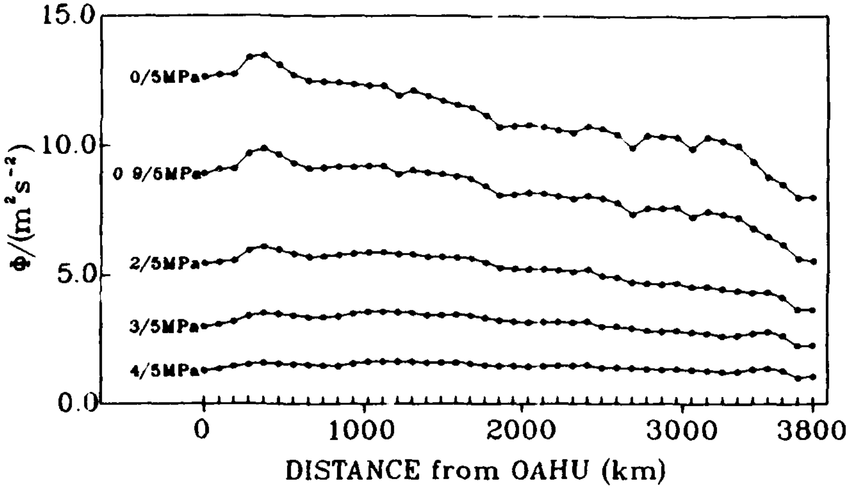


GEOPOTENTIAL ANOMALY
MAY 1, 1976
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/6MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

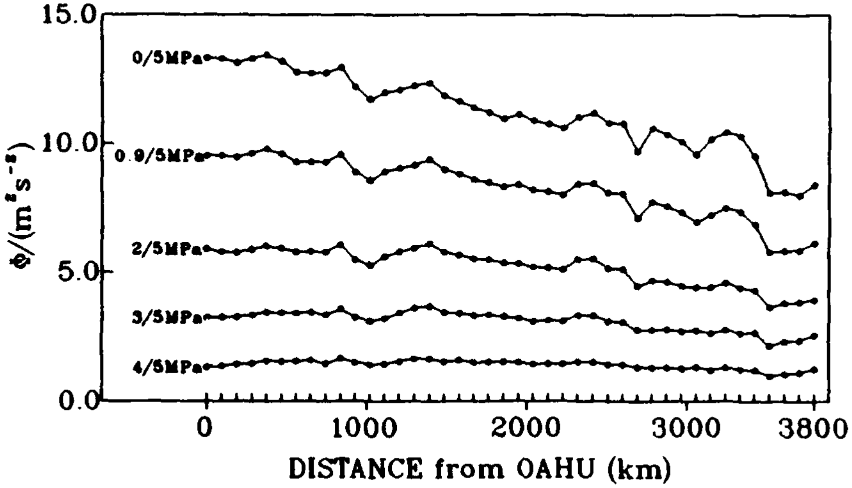
GEOPOTENTIAL ANOMALY
MAY 15, 1976



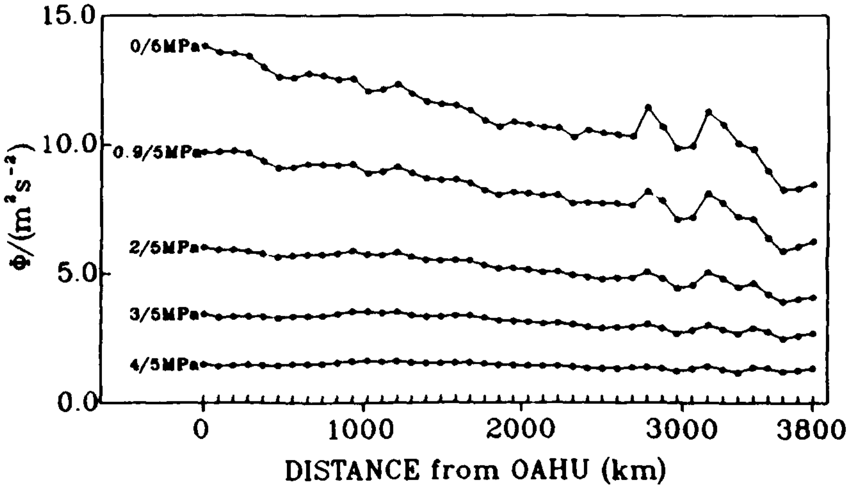
GEOPOTENTIAL ANOMALY
JUN 1, 1976



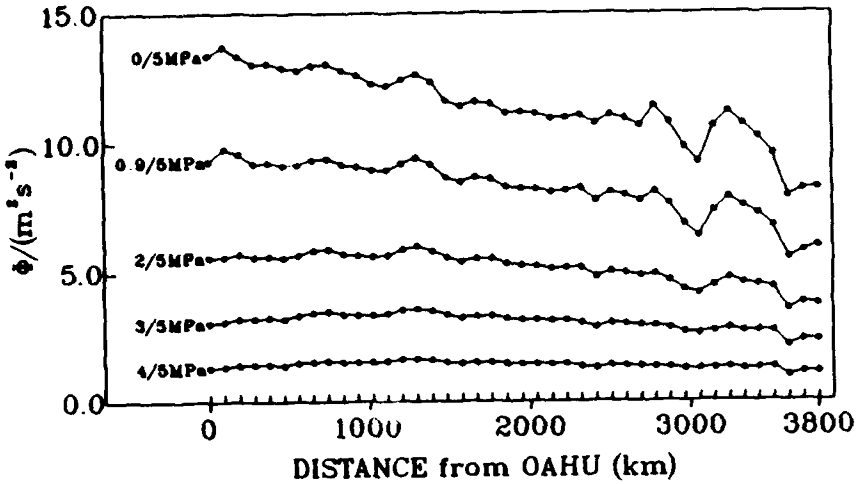
GEOPOTENTIAL ANOMALY
JUN 15, 1976



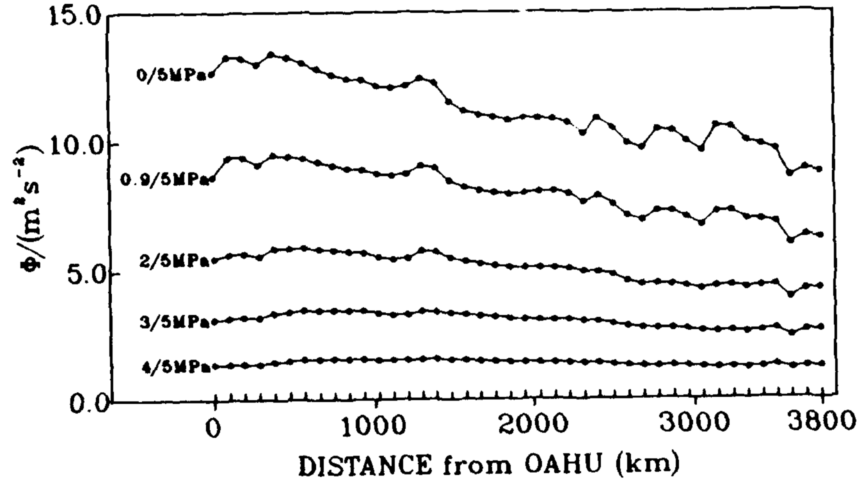
GEOPOTENTIAL ANOMALY
JUL 1, 1976



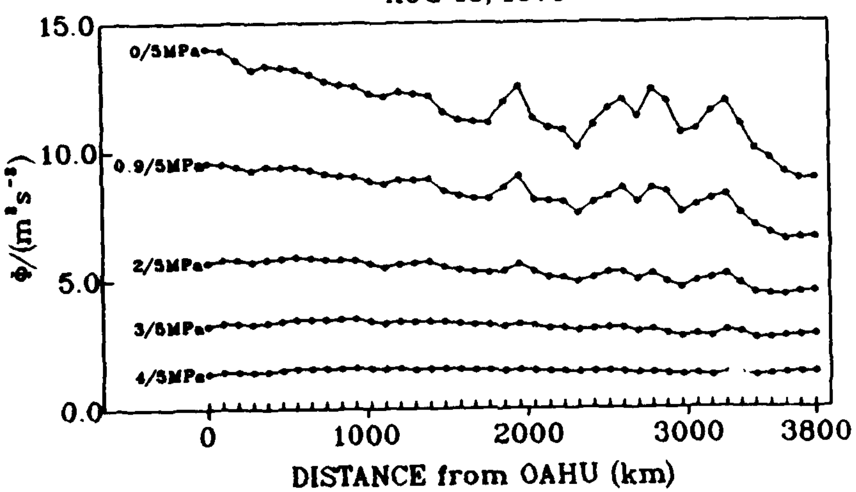
GEOPOTENTIAL ANOMALY
JUL 15, 1976



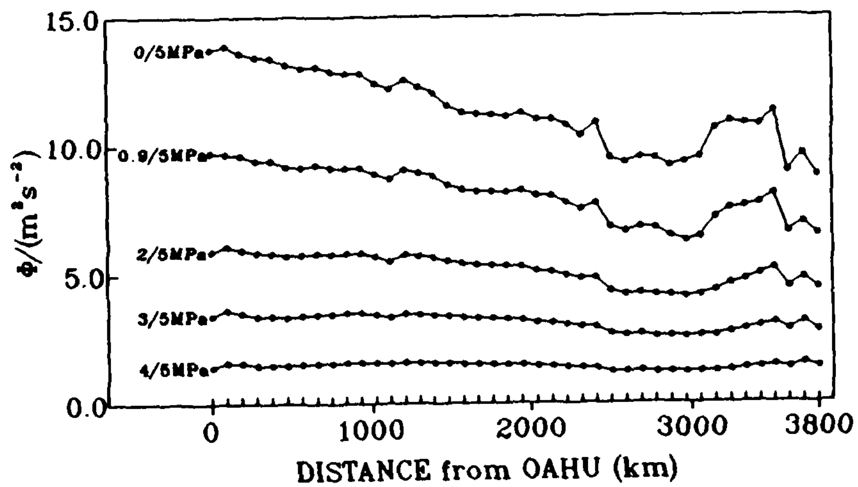
GEOPOTENTIAL ANOMALY
AUG 1, 1976

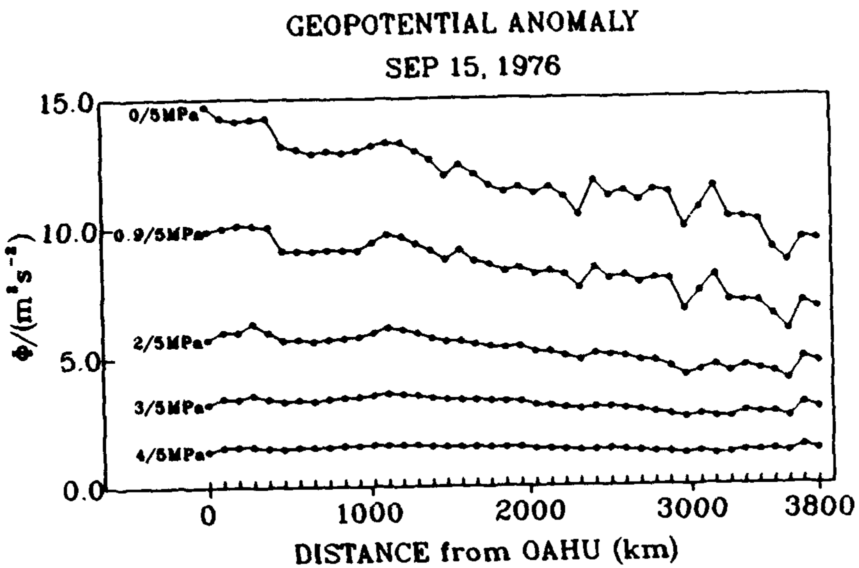


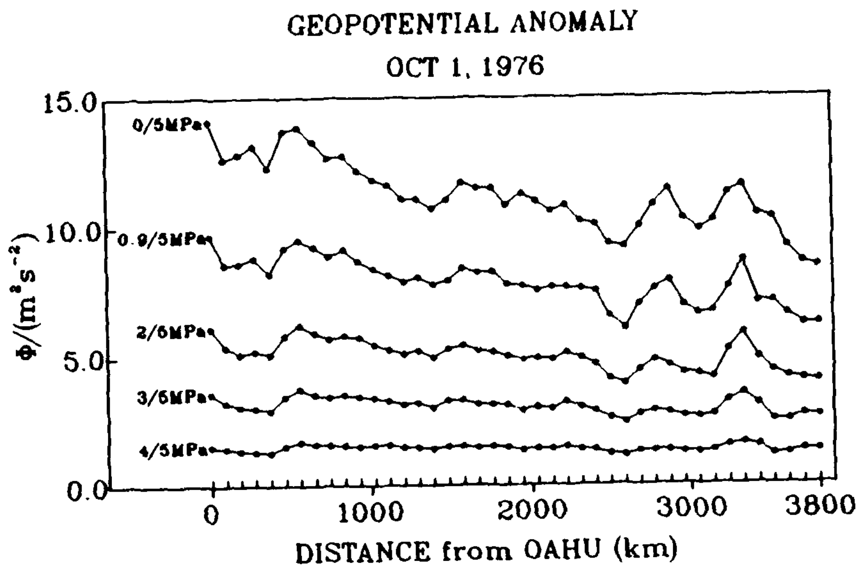
GEOPOTENTIAL ANOMALY
AUG 15, 1976

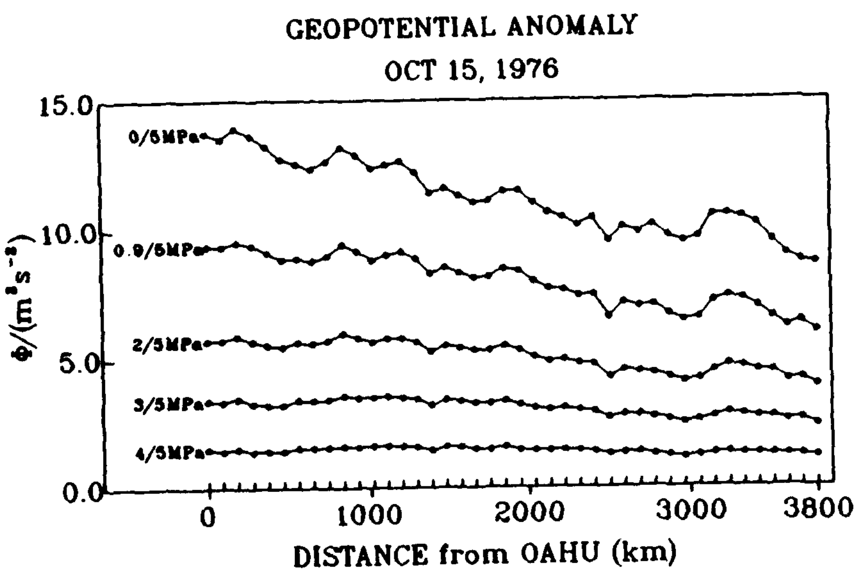


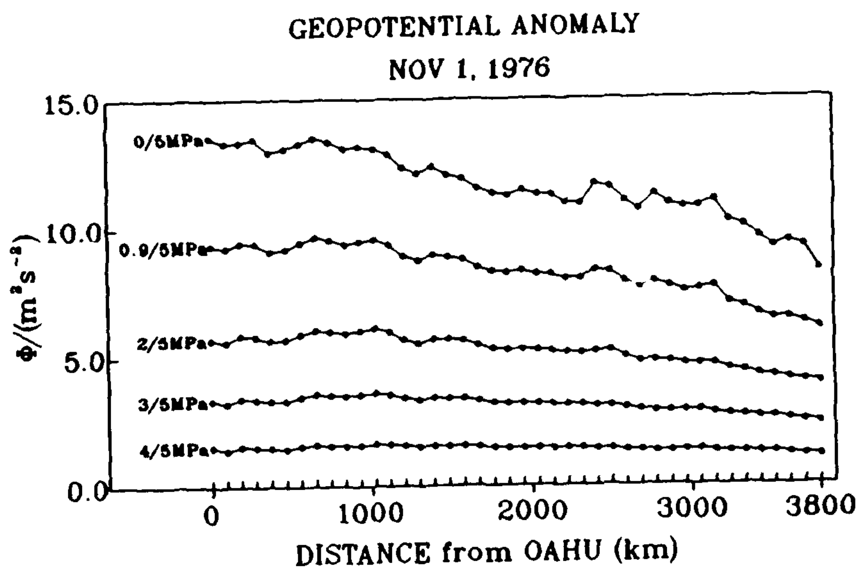
GEOPOTENTIAL ANOMALY
SEP 1, 1976



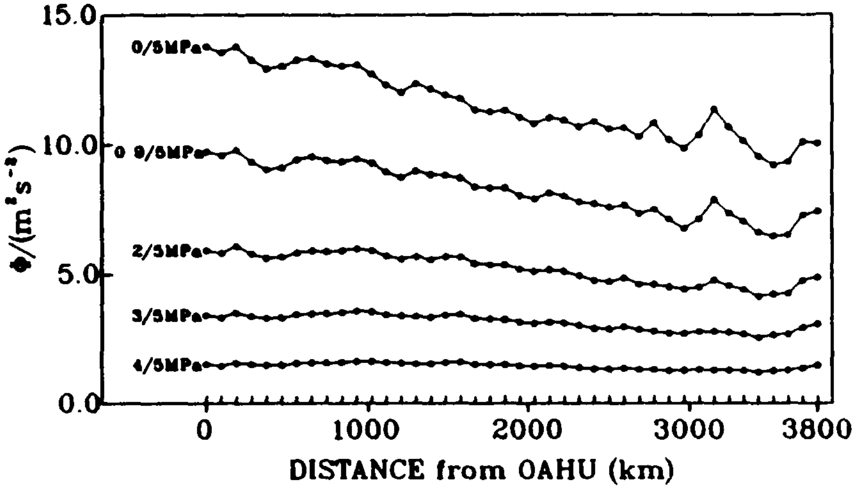

GEOPOTENTIAL ANOMALY
SEP 15, 1976
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 1, 1976
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

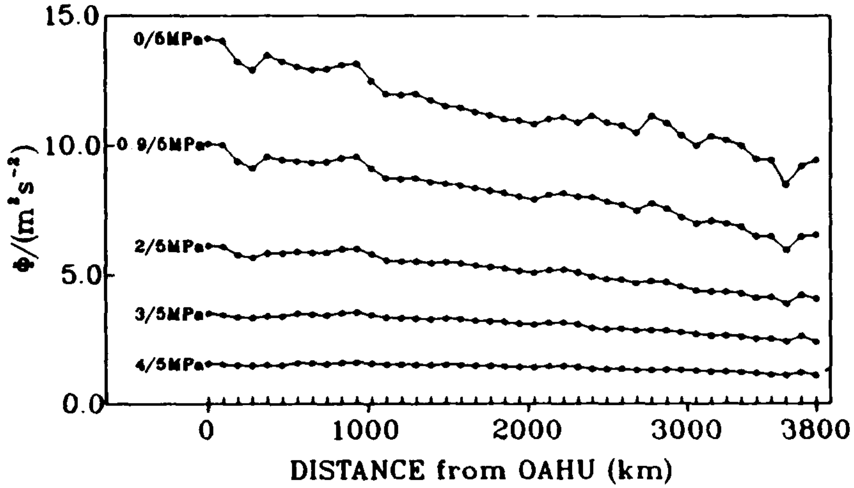

GEOPOTENTIAL ANOMALY
OCT 15, 1976
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
NOV 1, 1976
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

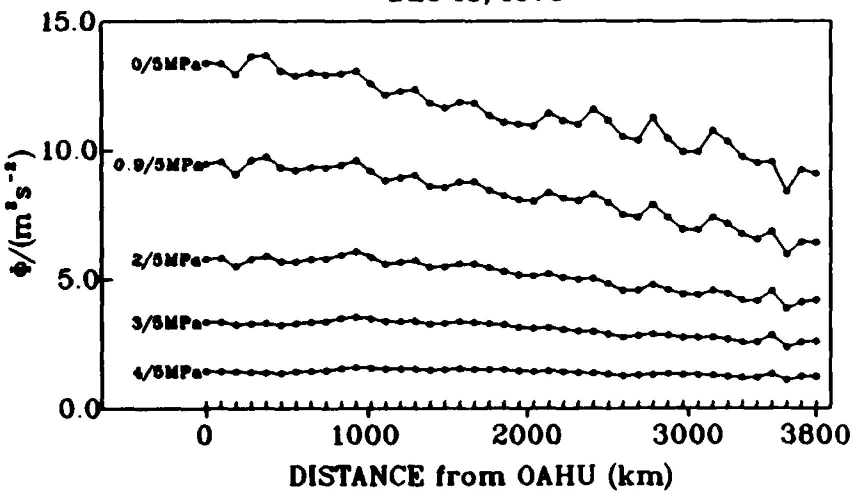
GEOPOTENTIAL ANOMALY
NOV 15, 1976



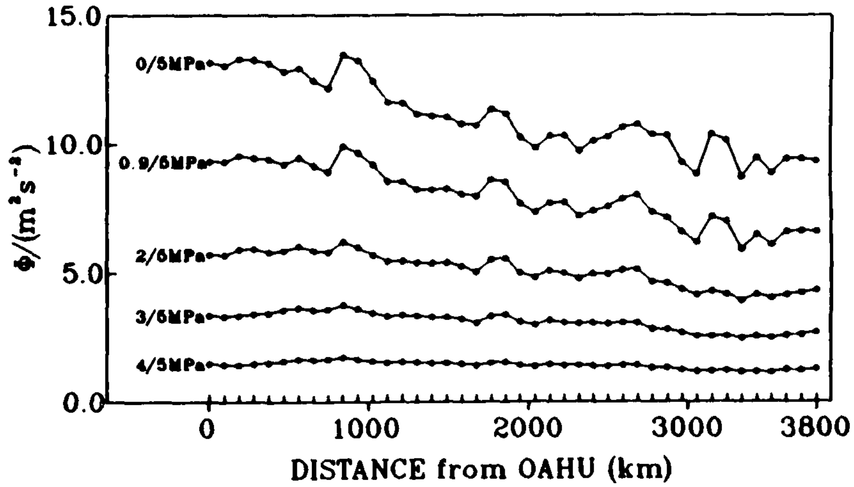
GEOPOTENTIAL ANOMALY
DEC 1, 1976



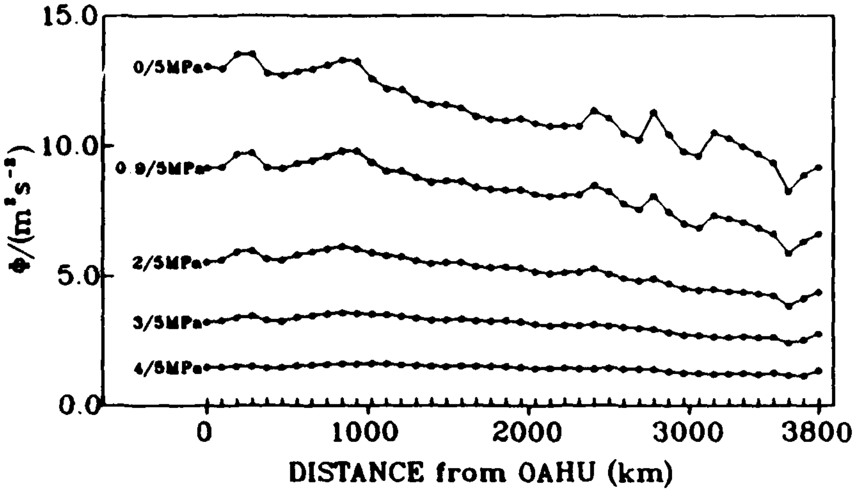
GEOPOTENTIAL ANOMALY
DEC 15, 1976



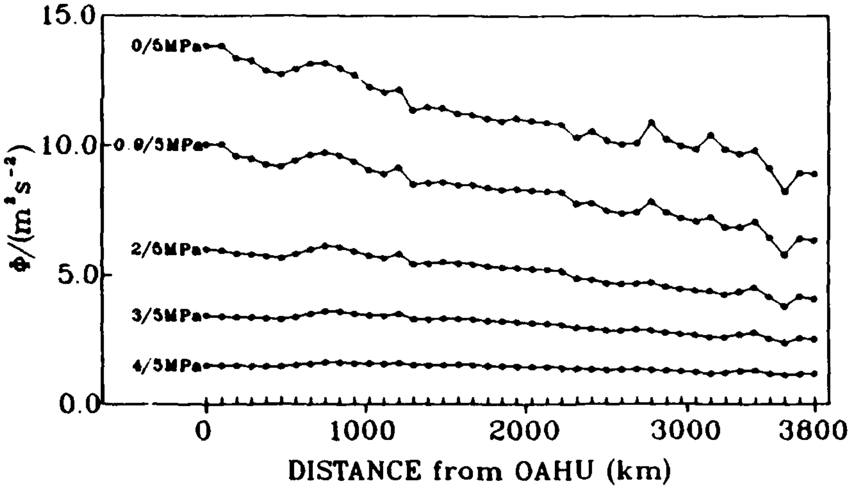
GEOPOTENTIAL ANOMALY
JAN 1, 1977



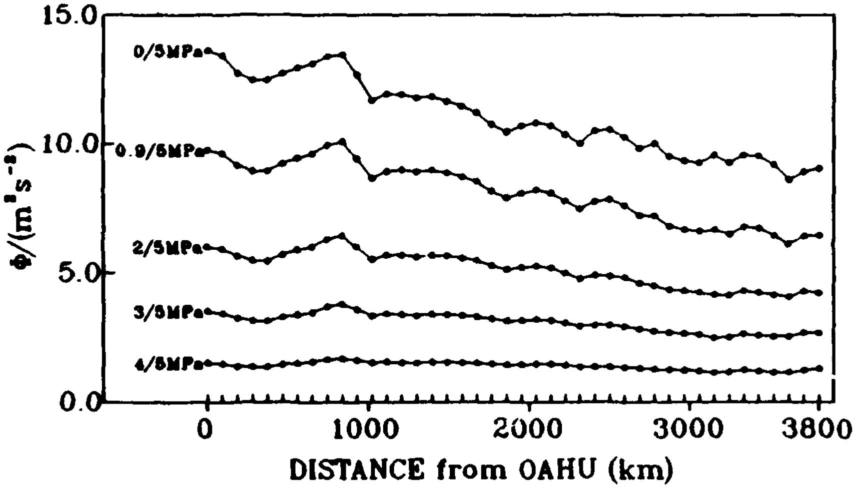
GEOPOTENTIAL ANOMALY
JAN 15, 1977



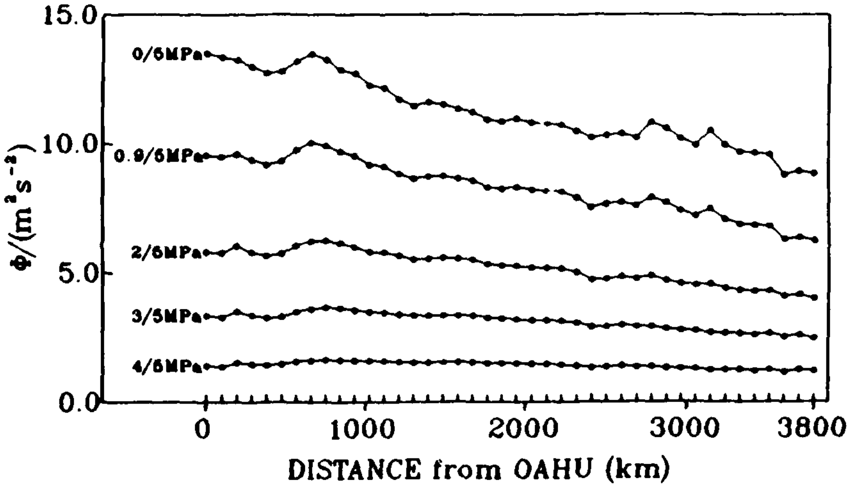
GEOPOTENTIAL ANOMALY
FEB 1, 1977

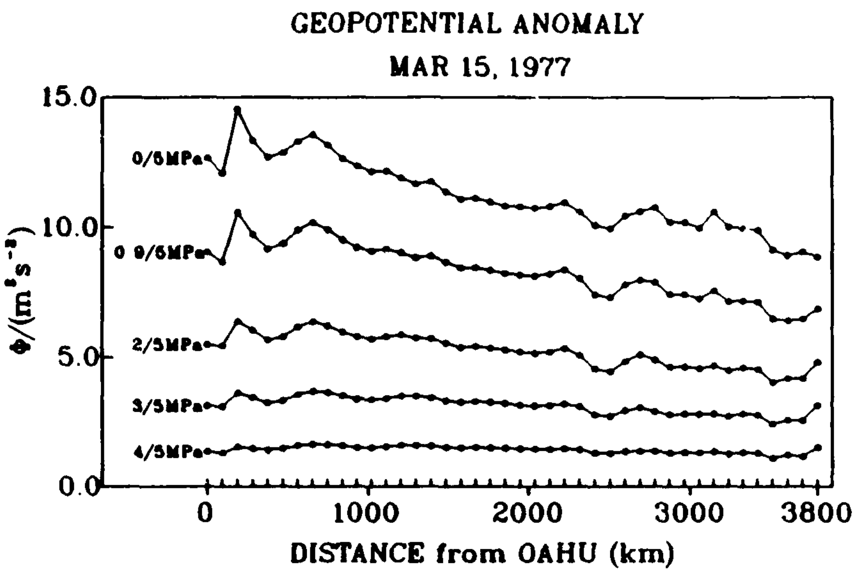


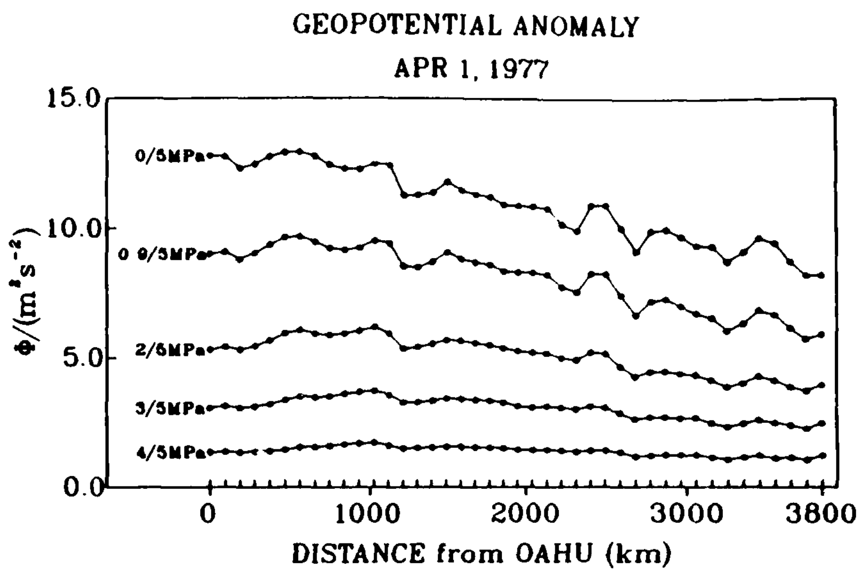
GEOPOTENTIAL ANOMALY
FEB 15, 1977

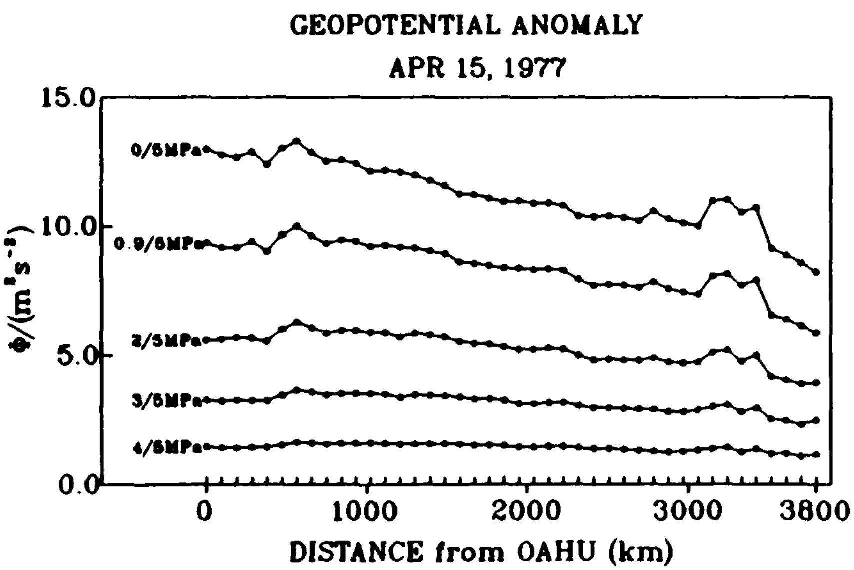


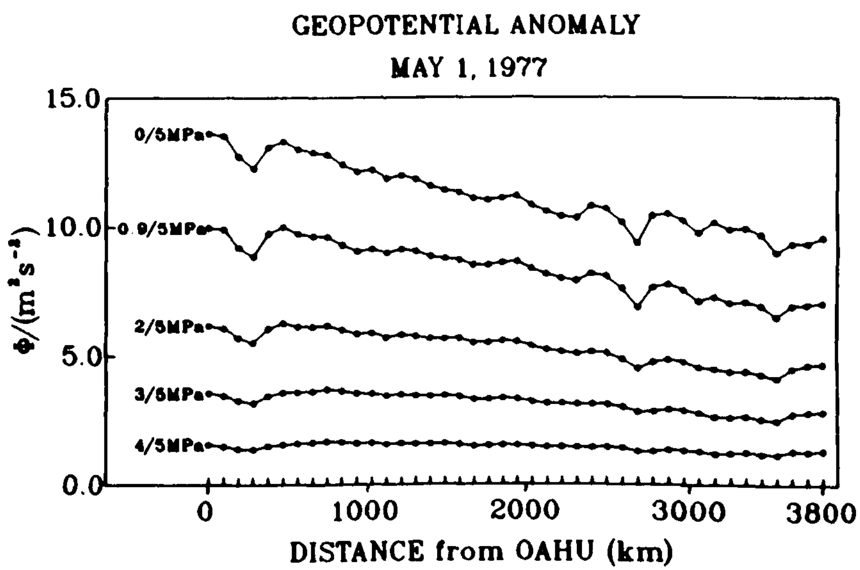
GEOPOTENTIAL ANOMALY
MAR 1, 1977




GEOPOTENTIAL ANOMALY
MAR 15, 1977
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

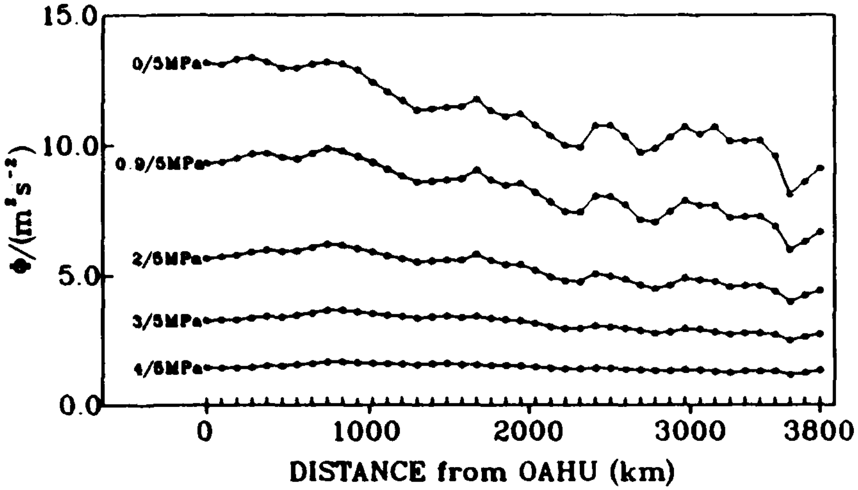

GEOPOTENTIAL ANOMALY
APR 1, 1977
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
APR 15, 1977
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAY 1, 1977
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

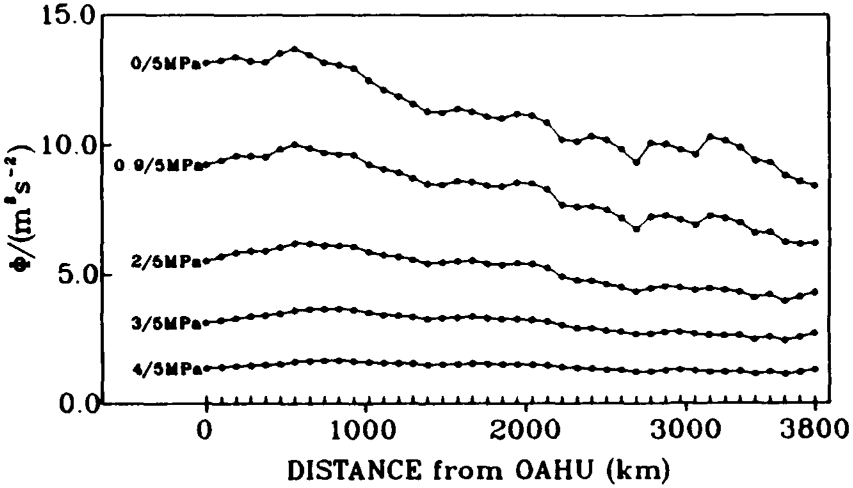
GEOPOTENTIAL ANOMALY

MAY 15, 1977



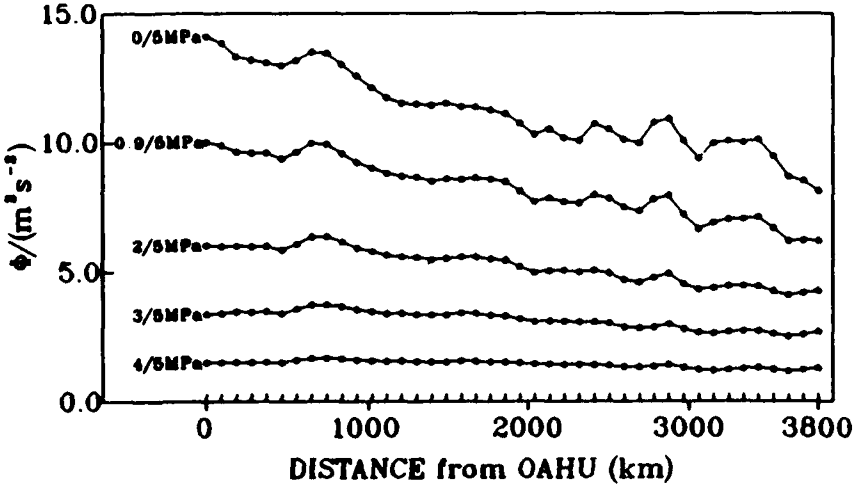
GEOPOTENTIAL ANOMALY

JUN 1, 1977



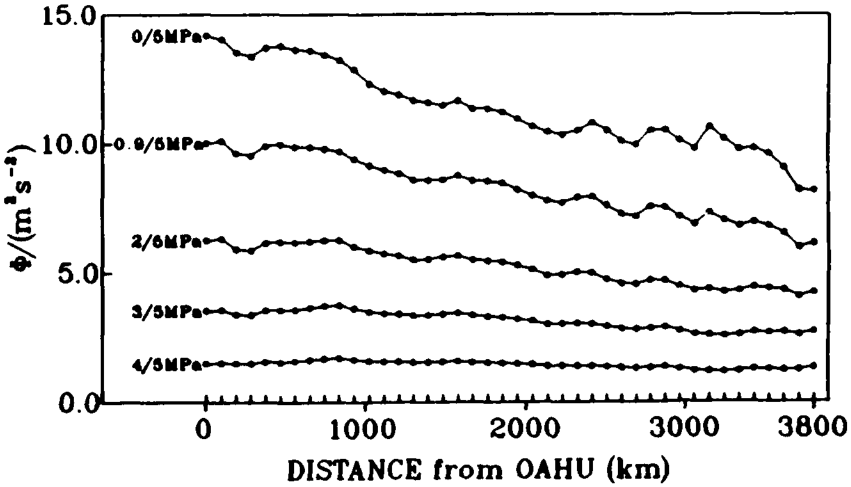
GEOPOTENTIAL ANOMALY

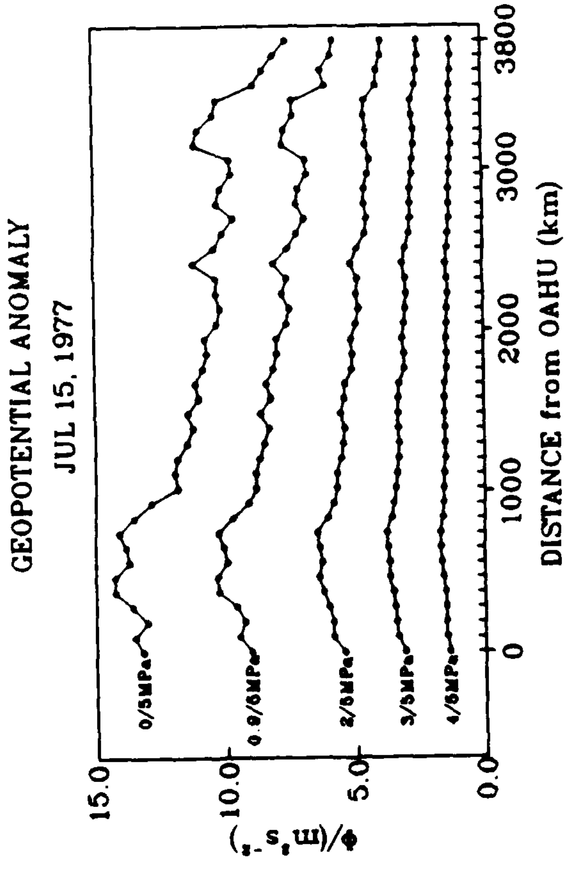
JUN 15, 1977

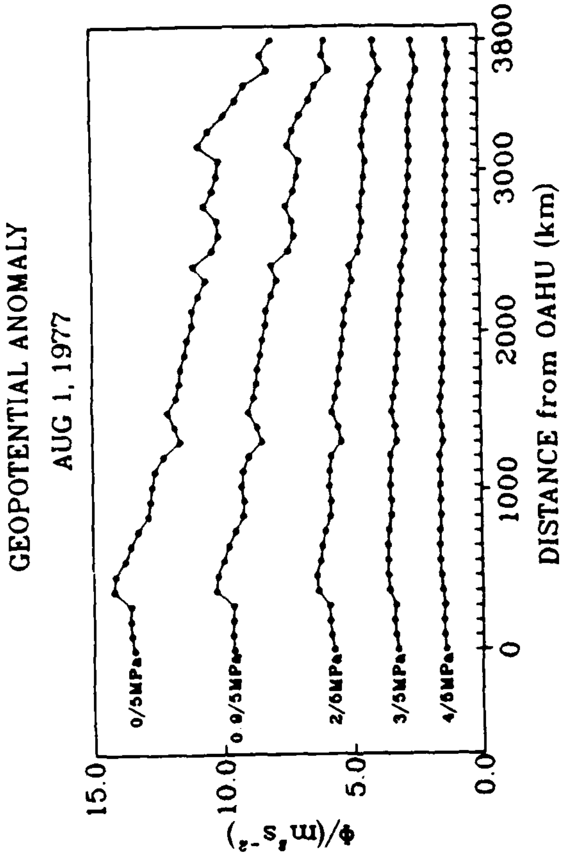


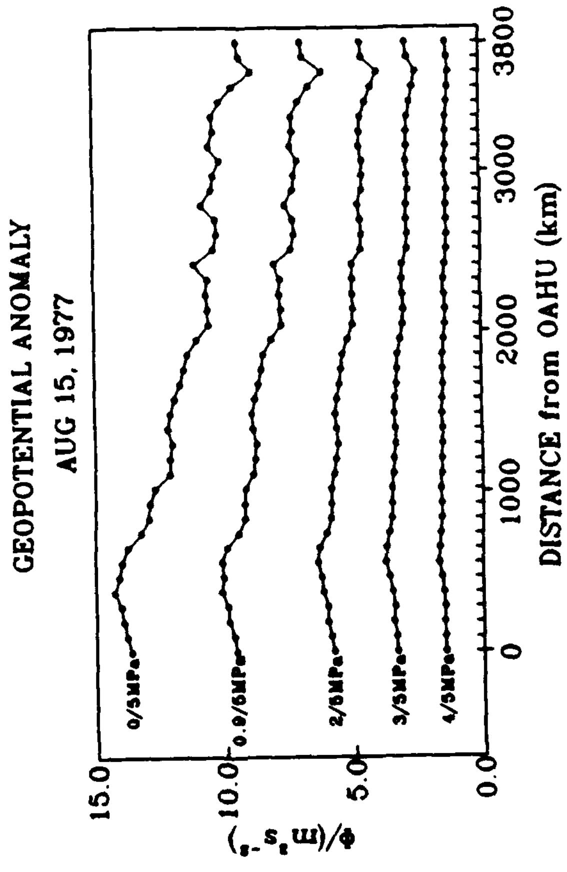
GEOPOTENTIAL ANOMALY

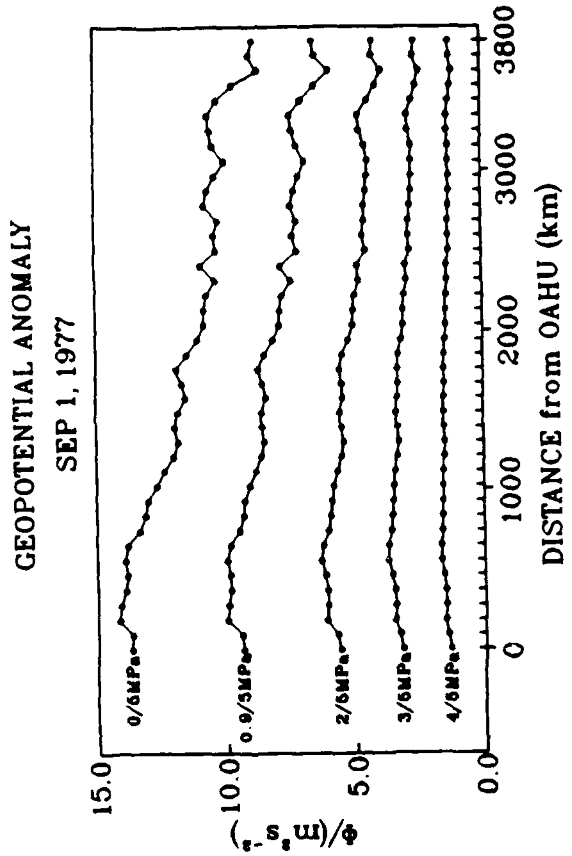
JUL 1, 1977



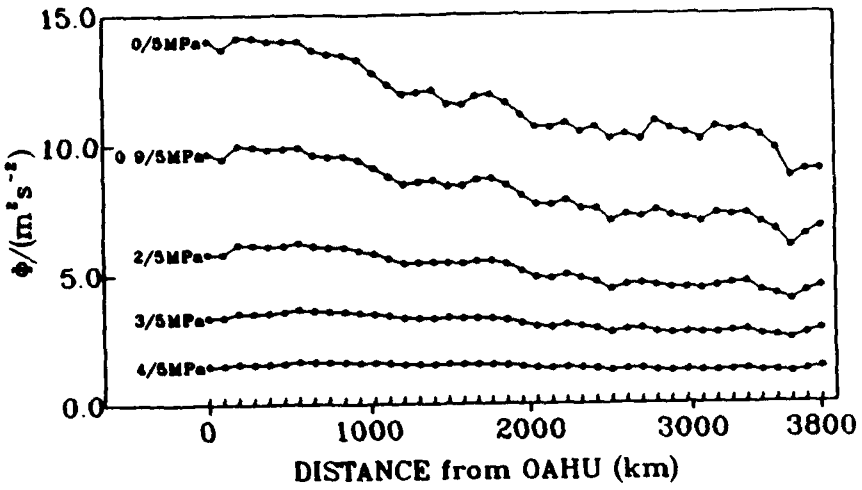

GEOPOTENTIAL ANOMALY
JUL 15, 1977
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
ϕ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
AUG 1, 1977
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
ϕ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

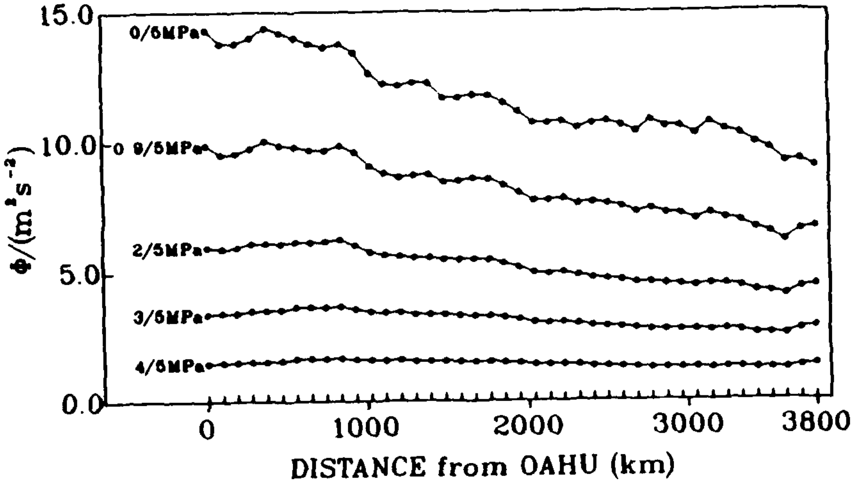

GEOPOTENTIAL ANOMALY
AUG 15, 1977
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
ϕ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
SEP 1, 1977
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
ϕ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

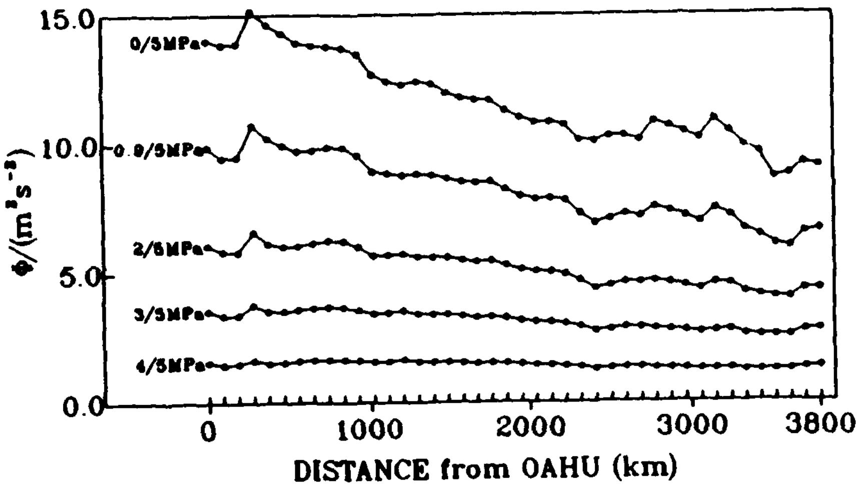
GEOPOTENTIAL ANOMALY
SEP 15, 1977



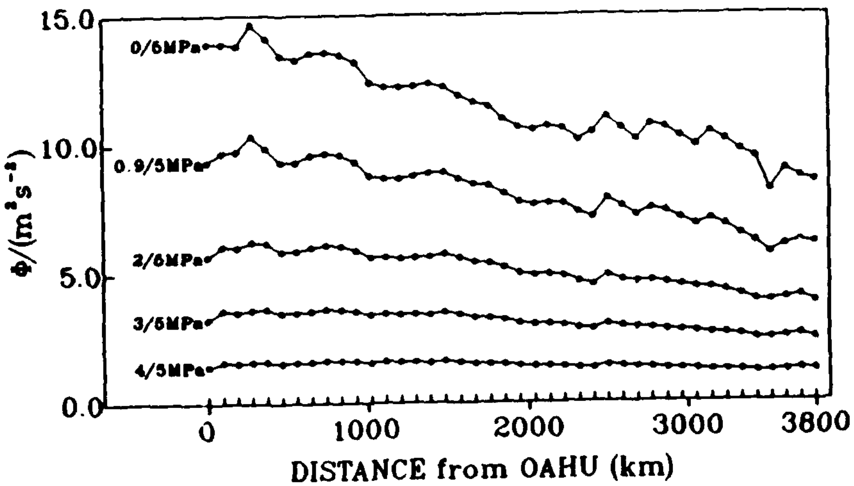
GEOPOTENTIAL ANOMALY
OCT 1, 1977



GEOPOTENTIAL ANOMALY
OCT 15, 1977

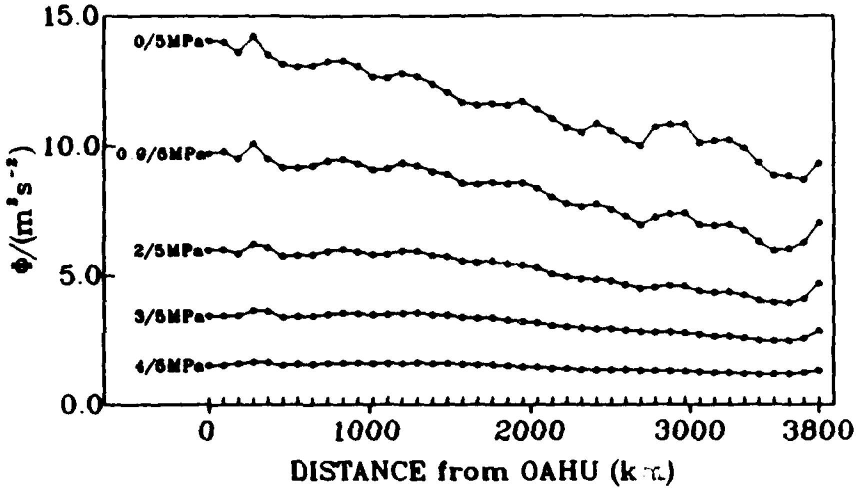


GEOPOTENTIAL ANOMALY
NOV 1, 1977



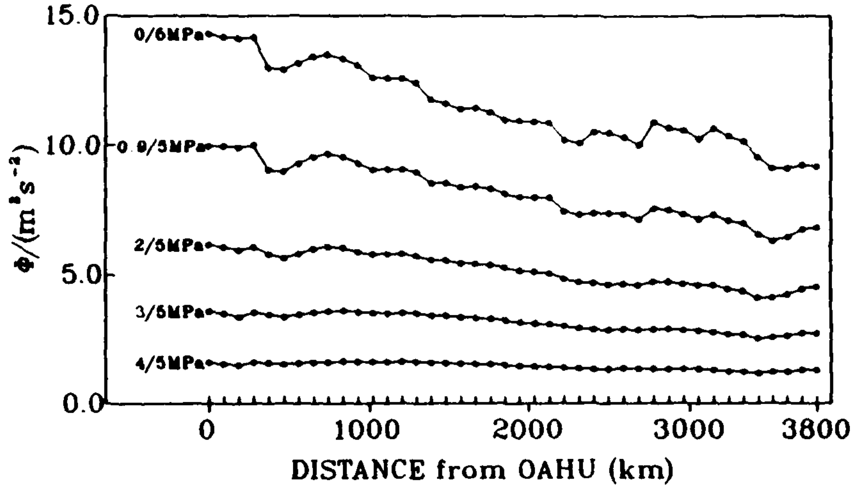
GEOPOTENTIAL ANOMALY

NOV 15, 1977



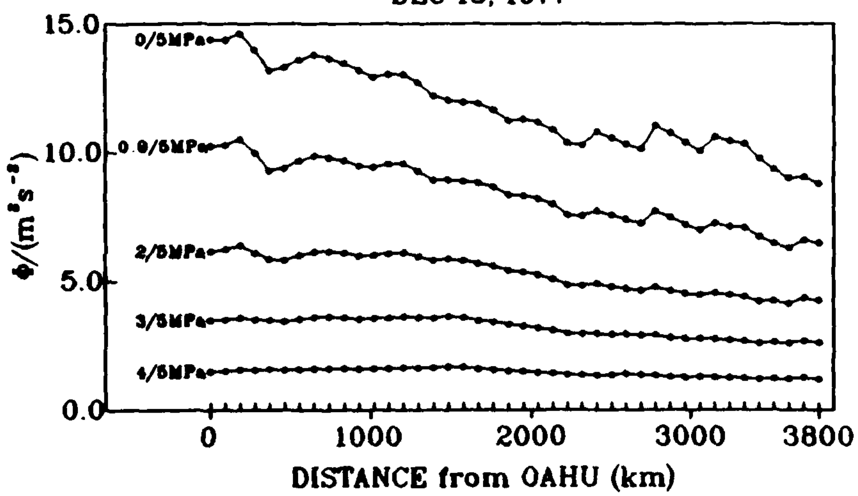
GEOPOTENTIAL ANOMALY

DEC 1, 1977



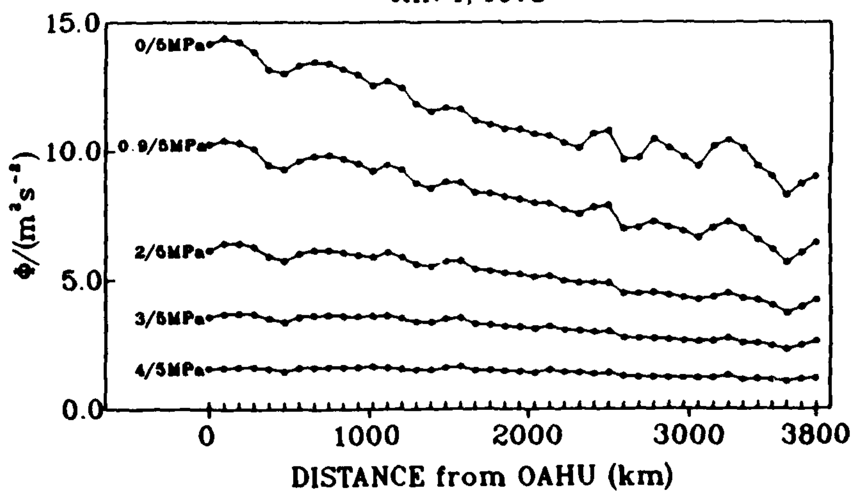
GEOPOTENTIAL ANOMALY

DEC 15, 1977

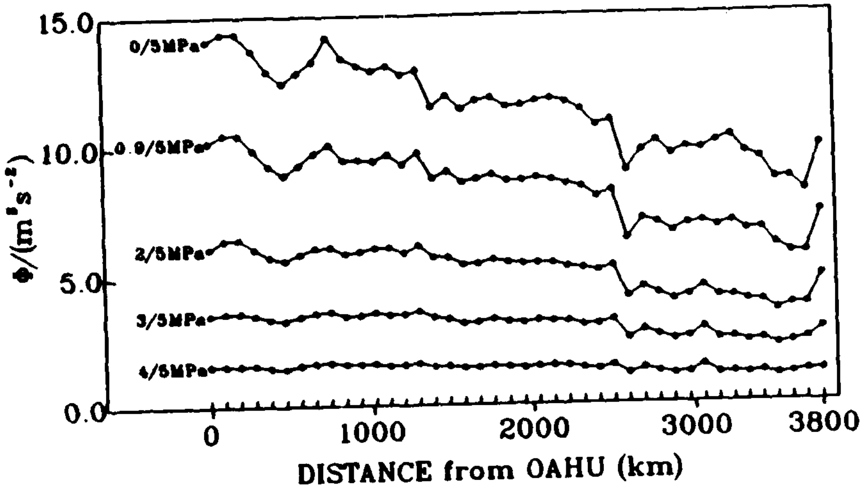


GEOPOTENTIAL ANOMALY

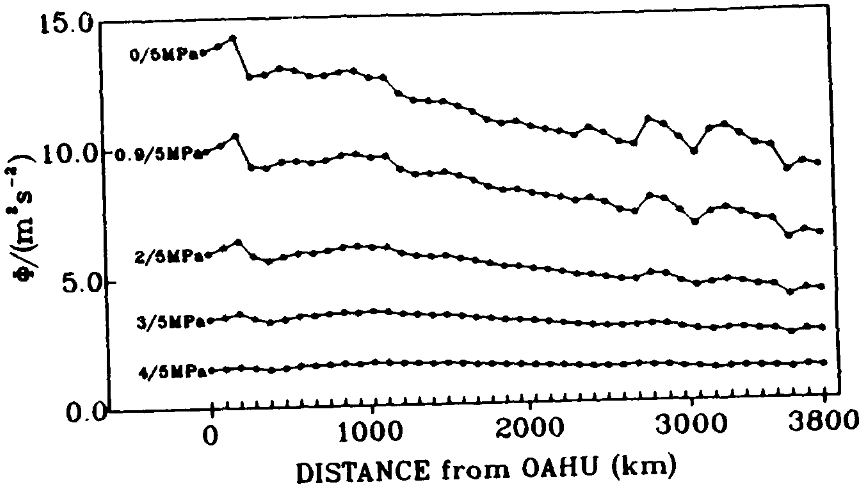
JAN 1, 1978



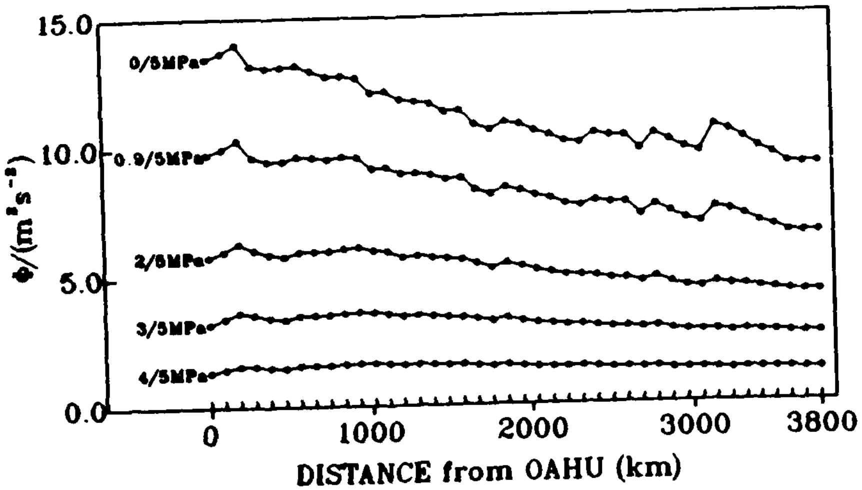
GEOPOTENTIAL ANOMALY
JAN 15, 1978



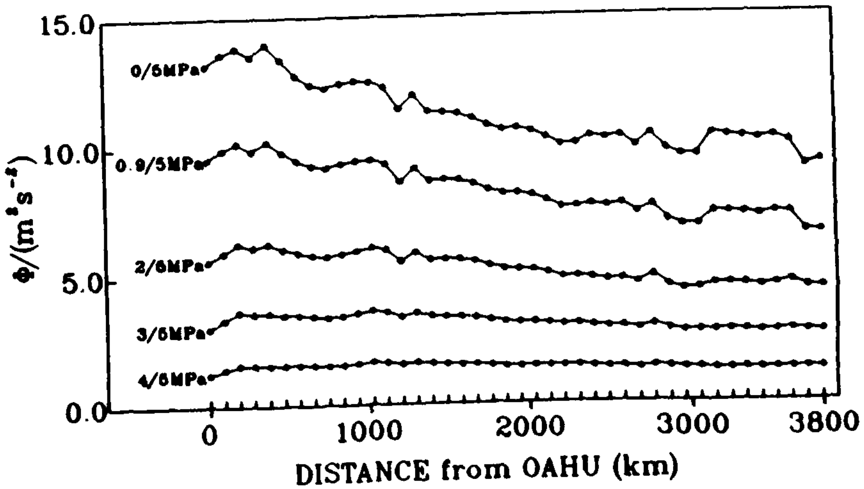
GEOPOTENTIAL ANOMALY
FEB 1, 1978



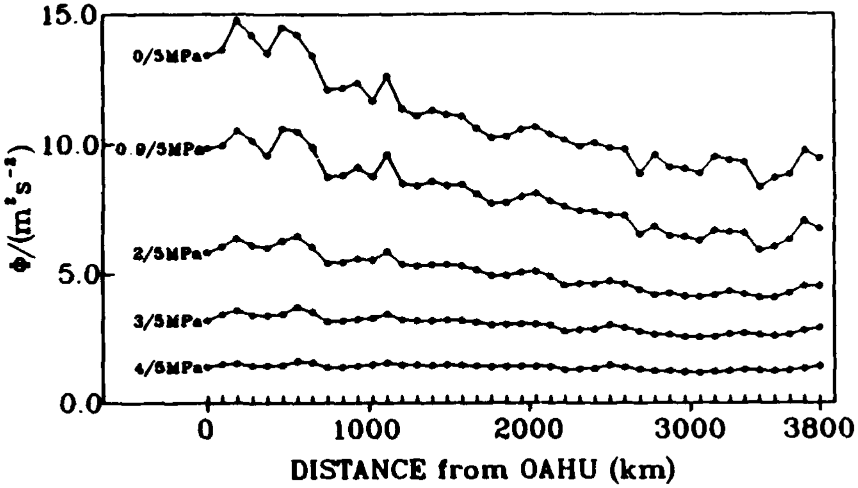
GEOPOTENTIAL ANOMALY
FEB 15, 1978



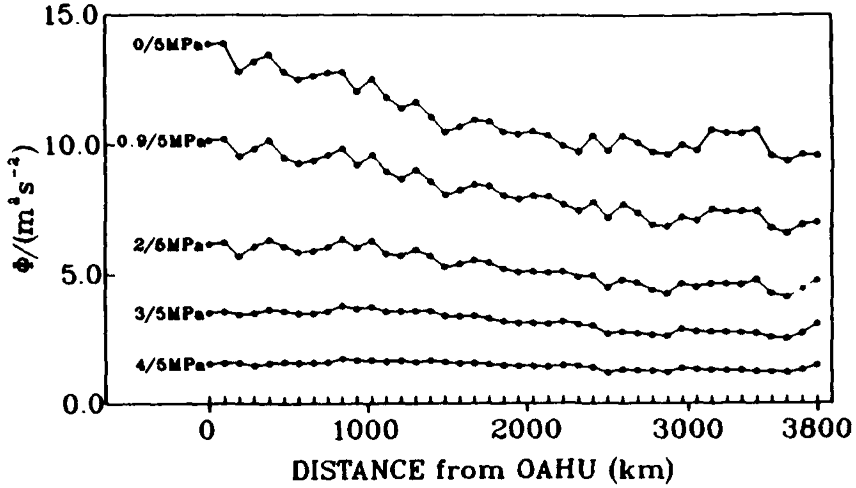
GEOPOTENTIAL ANOMALY
MAR 1, 1978



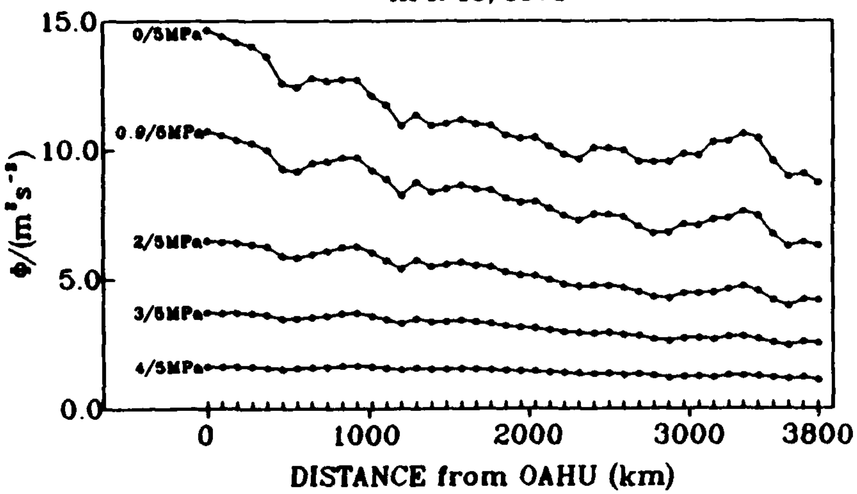
GEOPOTENTIAL ANOMALY
MAR 15, 1978



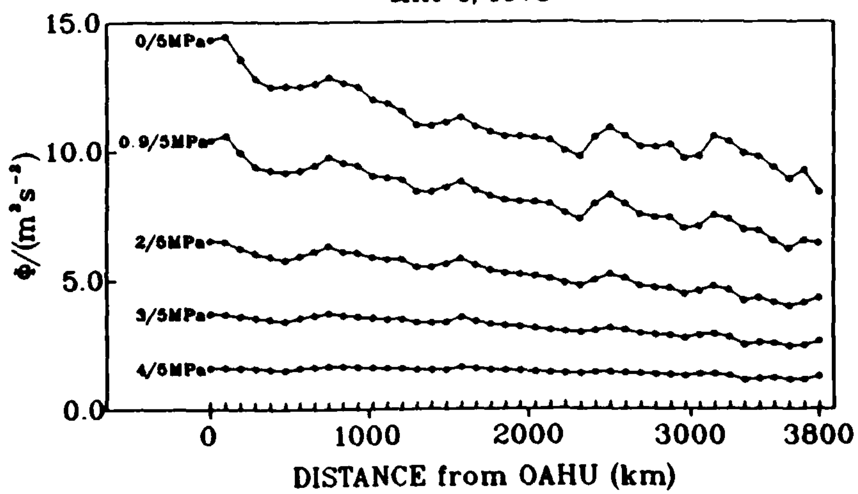
GEOPOTENTIAL ANOMALY
APR 1, 1978

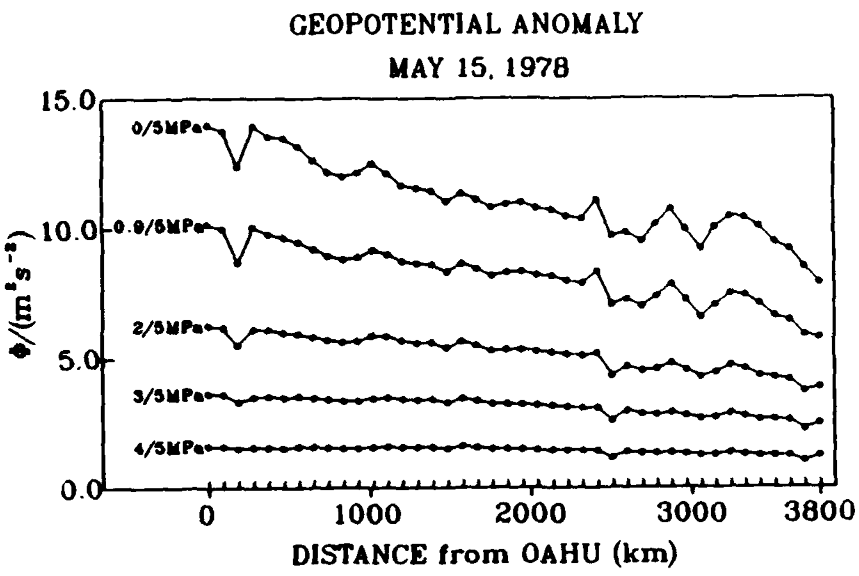


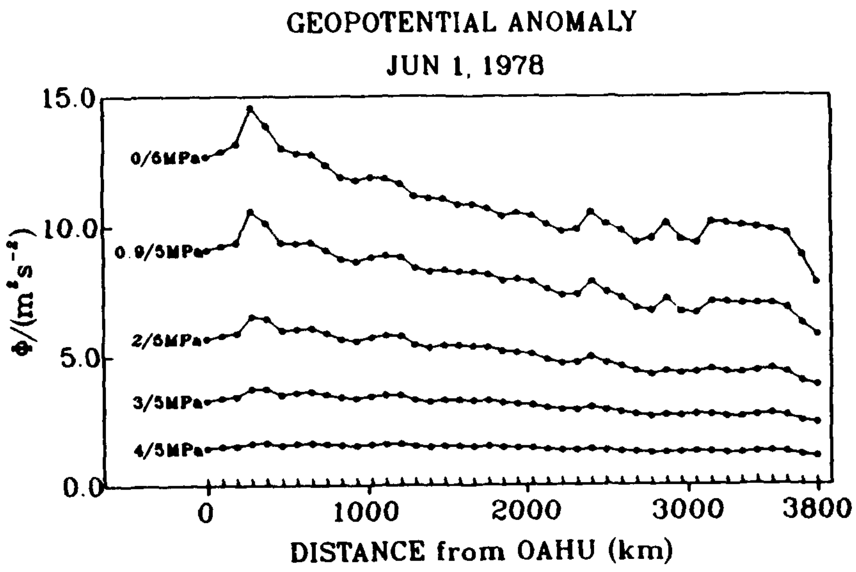
GEOPOTENTIAL ANOMALY
APR 15, 1978

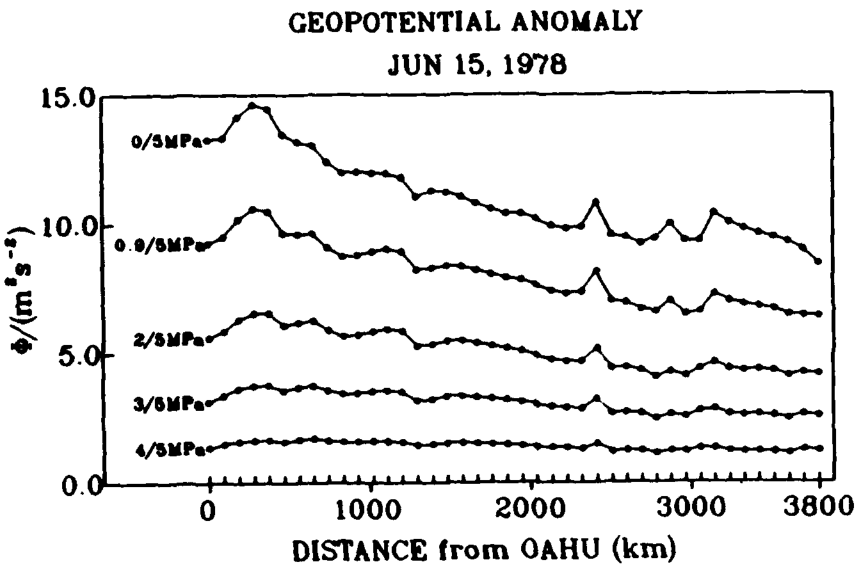


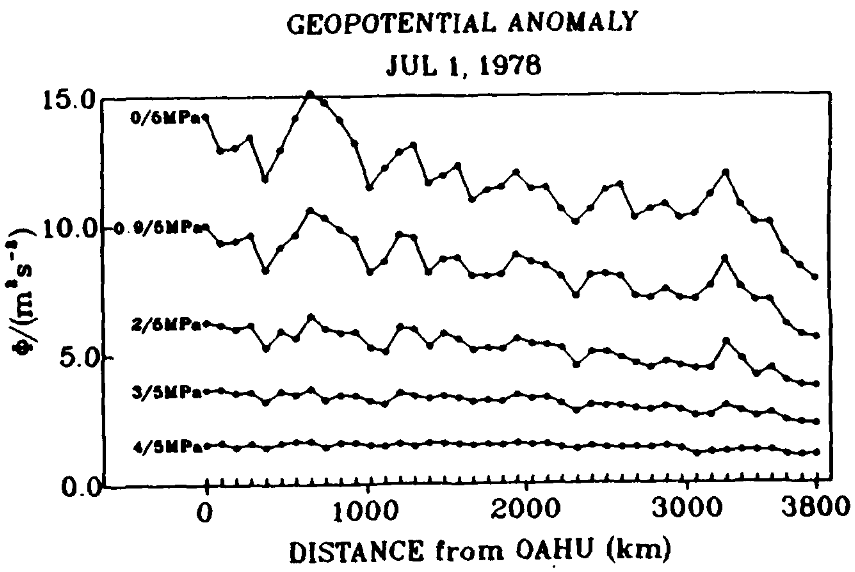
GEOPOTENTIAL ANOMALY
MAY 1, 1978



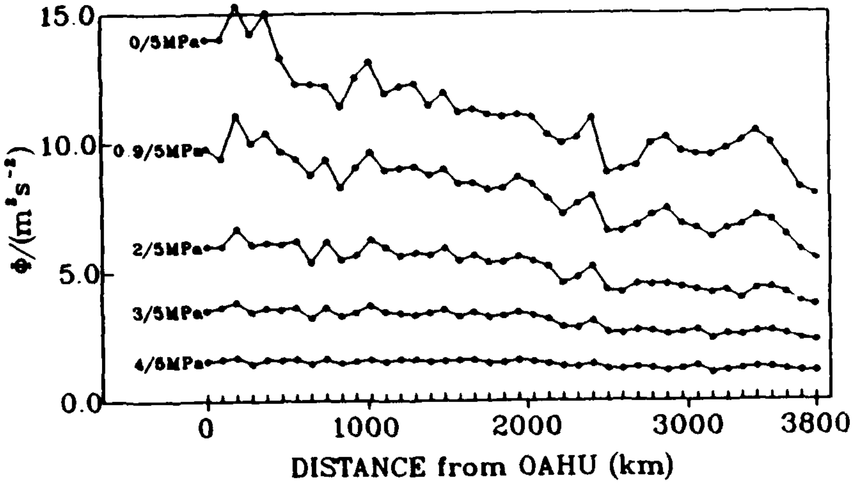

GEOPOTENTIAL ANOMALY
MAY 15, 1978
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUN 1, 1978
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

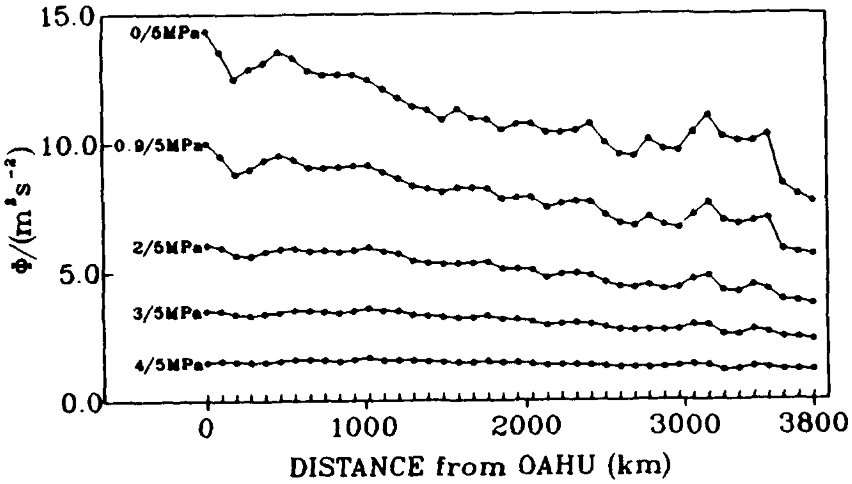

GEOPOTENTIAL ANOMALY
JUN 15, 1978
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUL 1, 1978
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

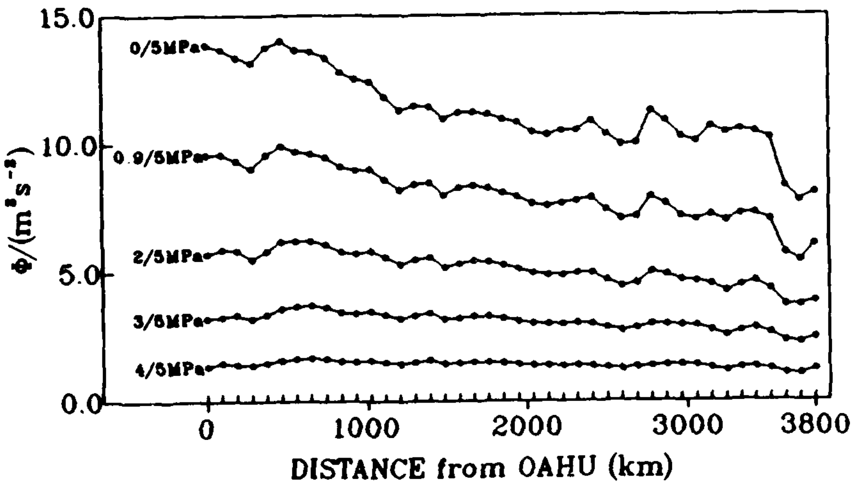
GEOPOTENTIAL ANOMALY
JUL 15, 1978



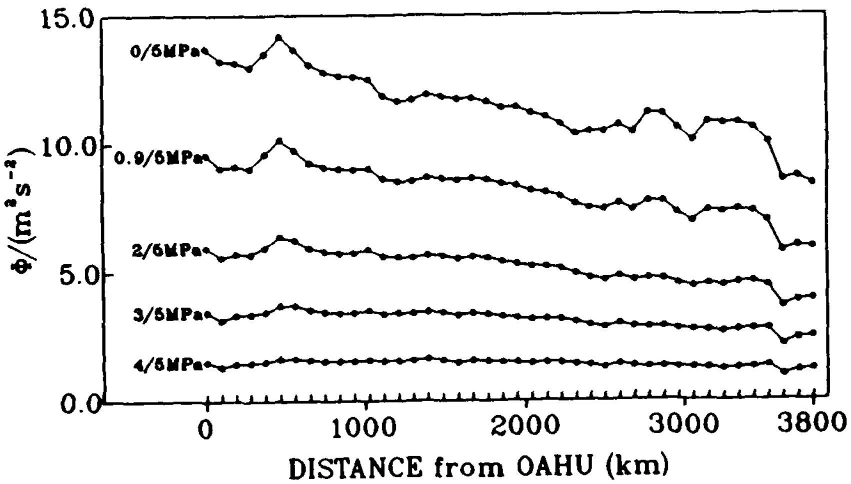
GEOPOTENTIAL ANOMALY
AUG 1, 1978

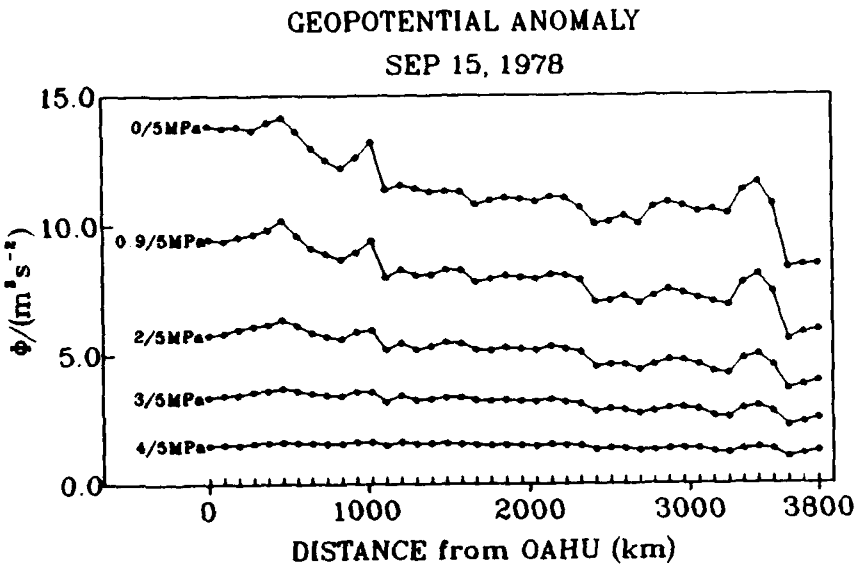


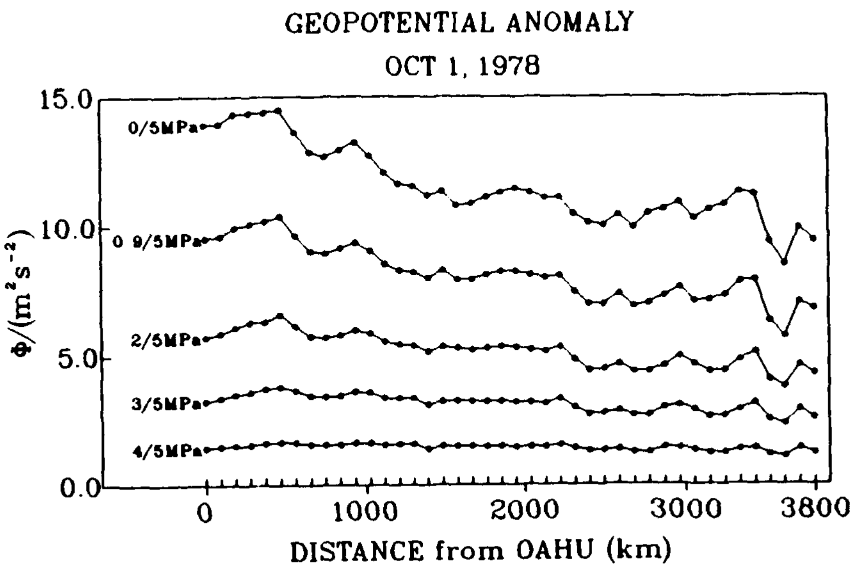
GEOPOTENTIAL ANOMALY
AUG 15, 1978

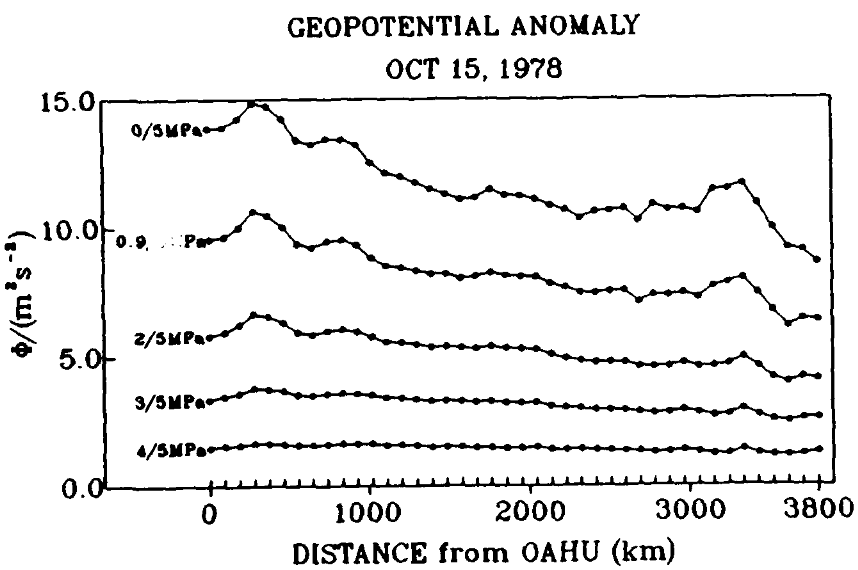


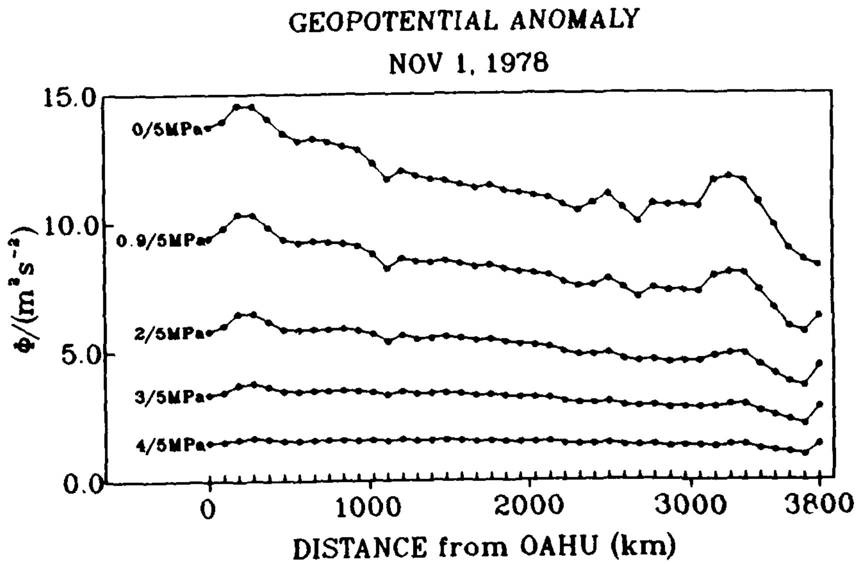
GEOPOTENTIAL ANOMALY
SEP 1, 1978

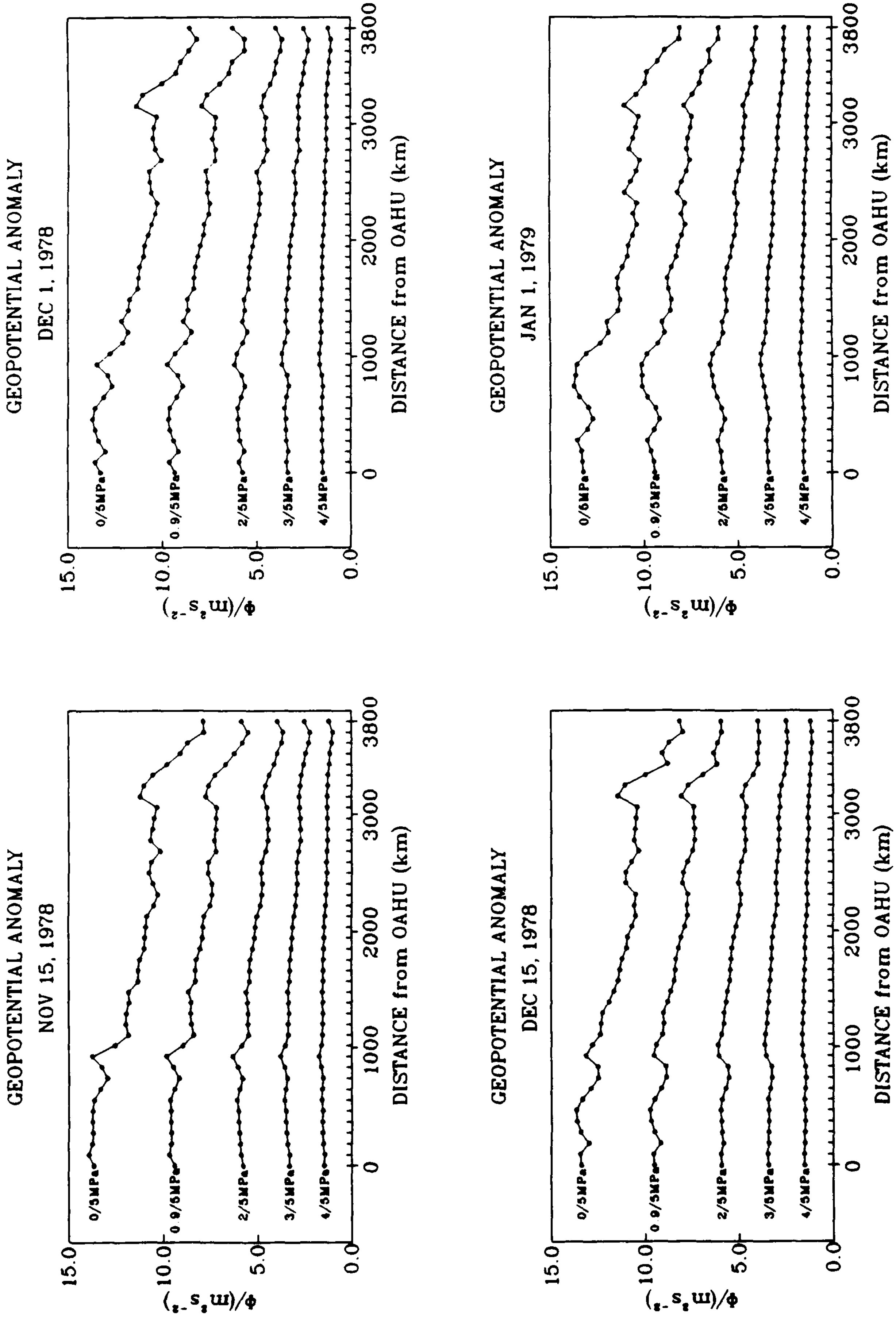



GEOPOTENTIAL ANOMALY
SEP 15, 1978
Φ/(m²s⁻²)
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 1, 1978
Φ/(m²s⁻²)
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
DISTANCE from OAHU (km)

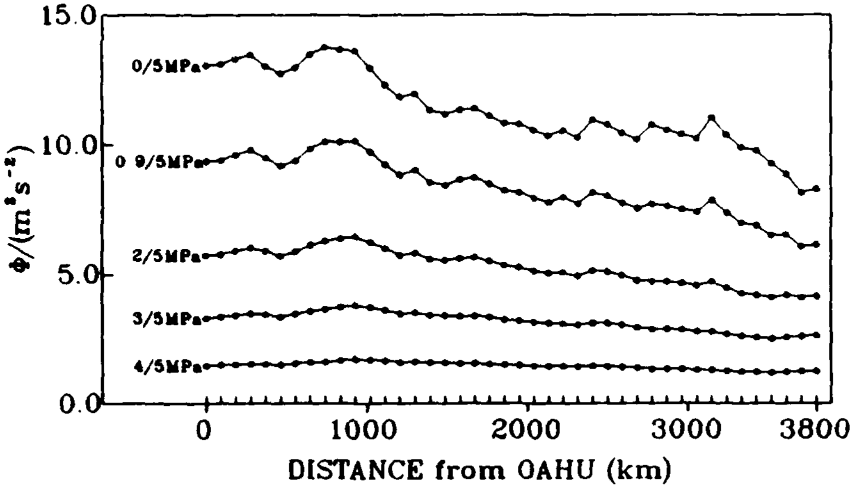

GEOPOTENTIAL ANOMALY
OCT 15, 1978
Φ/(m²s⁻²)
0/5MPa
2/5MPa
3/5MPa
4/5MPa
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
NOV 1, 1978
Φ/(m²s⁻²)
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
DISTANCE from OAHU (km)

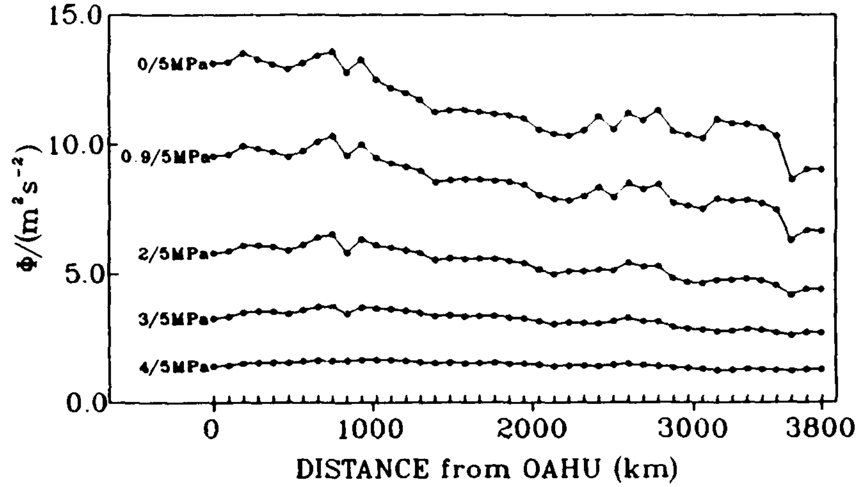


GEOPOTENTIAL ANOMALY
NOV 15, 1978
GEOPOTENTIAL ANOMALY
DEC 1, 1978
GEOPOTENTIAL ANOMALY
DEC 15, 1978
GEOPOTENTIAL ANOMALY
JAN 1, 1979
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
$\Phi/(m^2 s^{-2})$
15.0
10.0
5.0
0.0
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

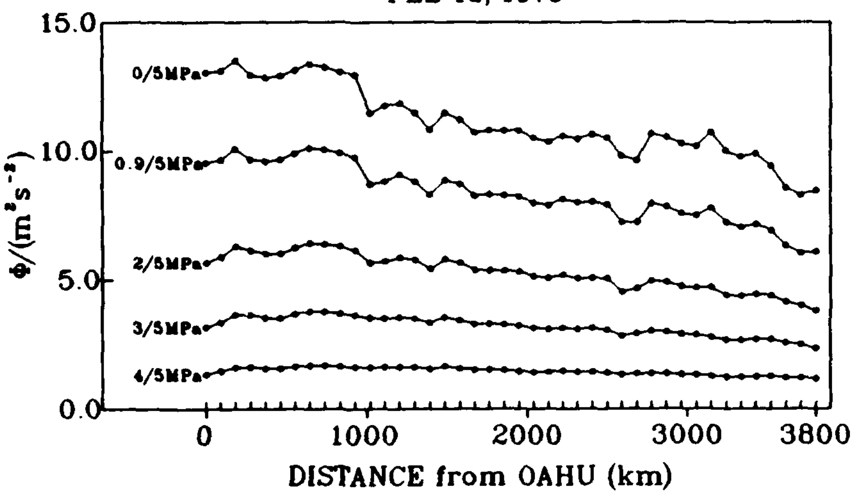
GEOPOTENTIAL ANOMALY
JAN 15, 1979



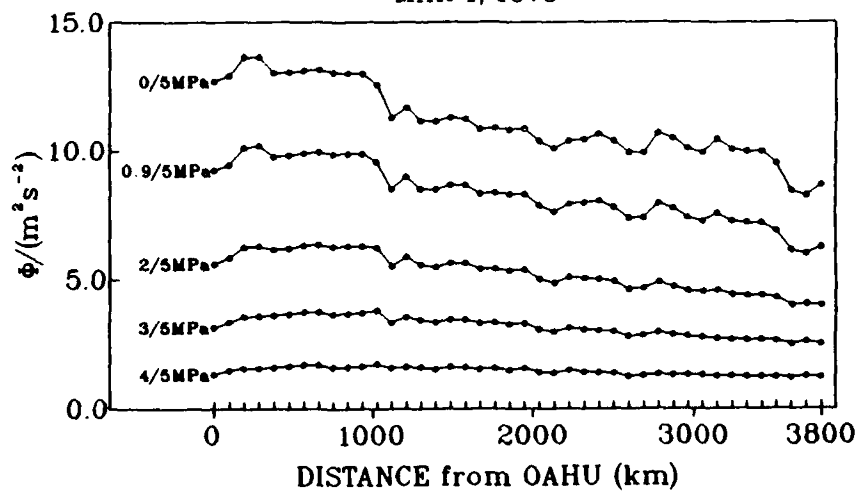
GEOPOTENTIAL ANOMALY
FEB 1, 1979



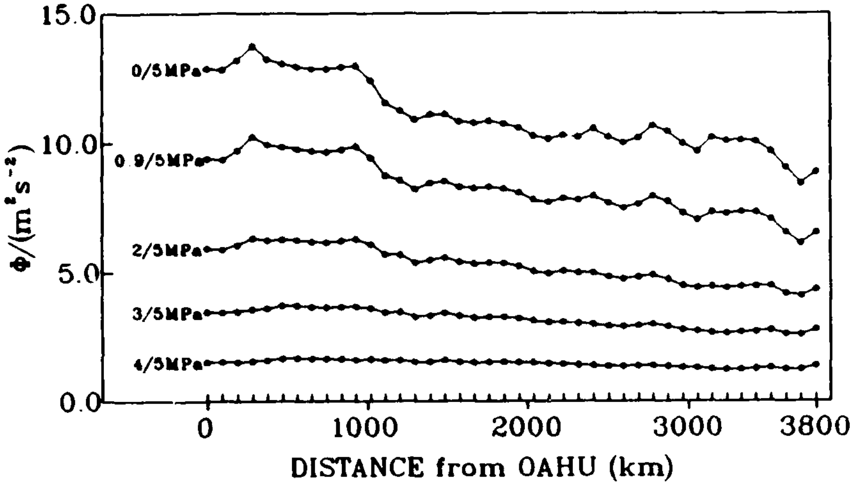
GEOPOTENTIAL ANOMALY
FEB 15, 1979



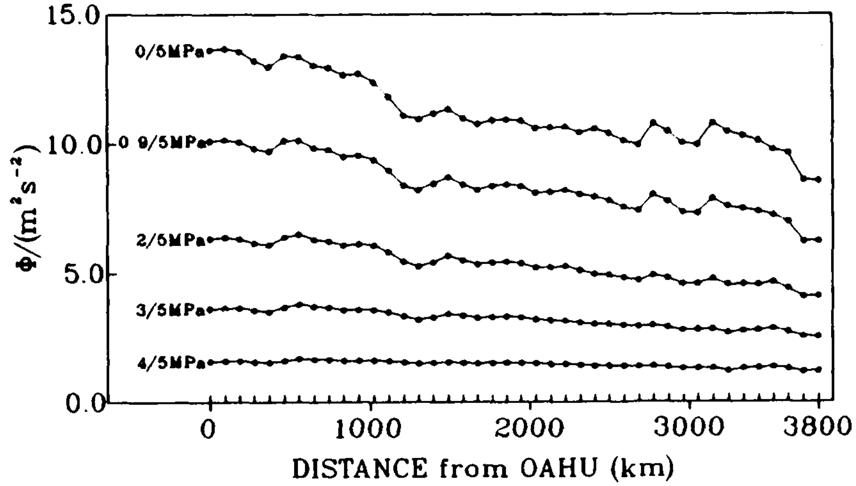
GEOPOTENTIAL ANOMALY
MAR 1, 1979



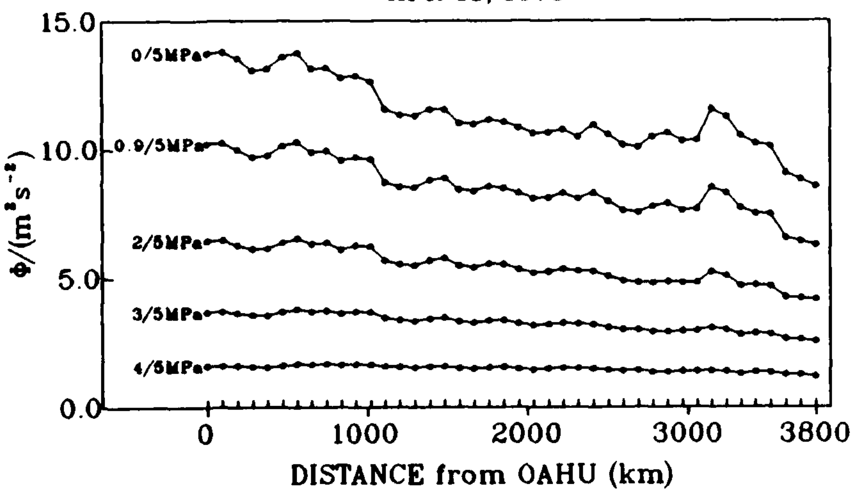
GEOPOTENTIAL ANOMALY
MAR 15, 1979



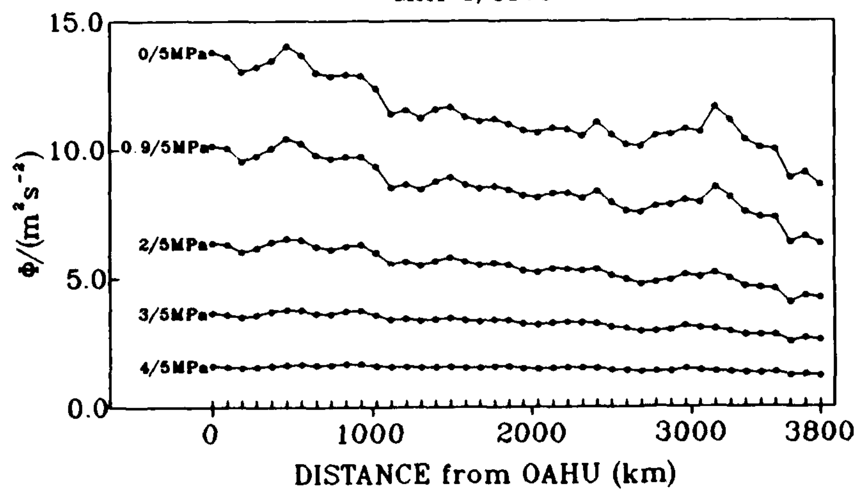
GEOPOTENTIAL ANOMALY
APR 1, 1979



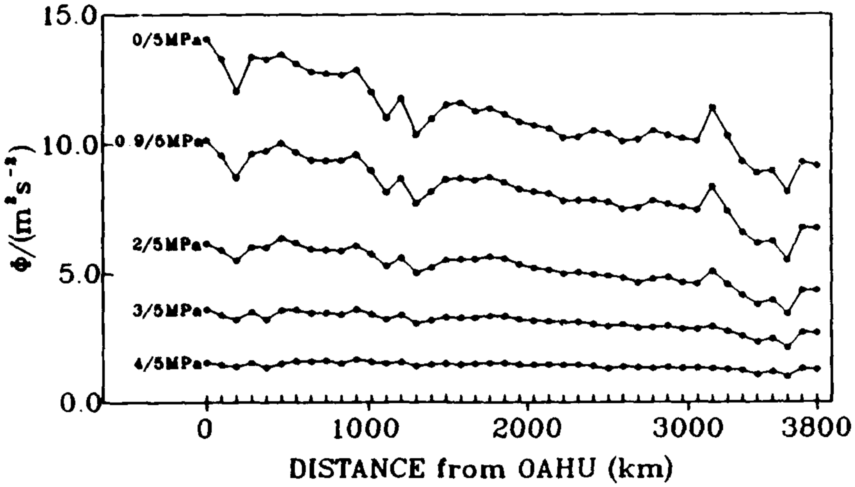
GEOPOTENTIAL ANOMALY
APR 15, 1979



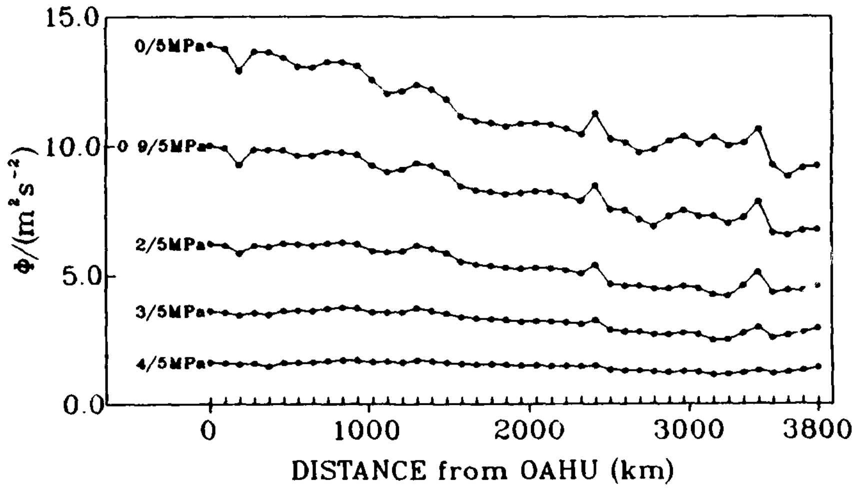
GEOPOTENTIAL ANOMALY
MAY 1, 1979



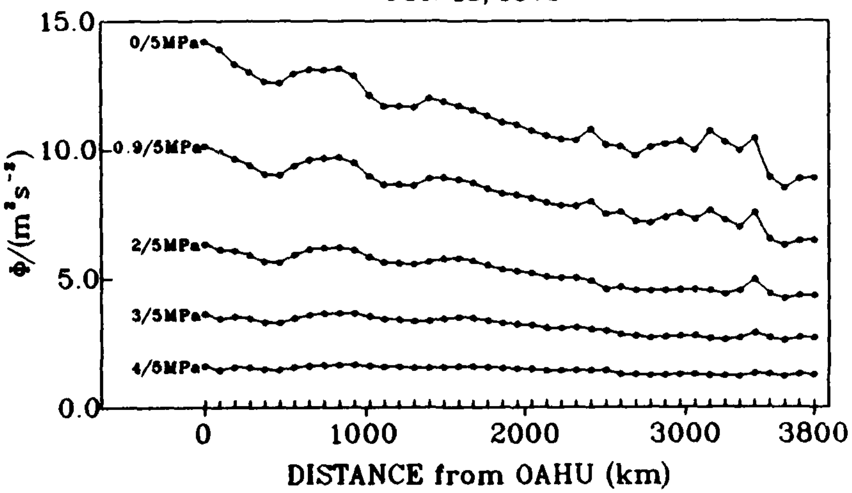
GEOPOTENTIAL ANOMALY
MAY 15, 1979



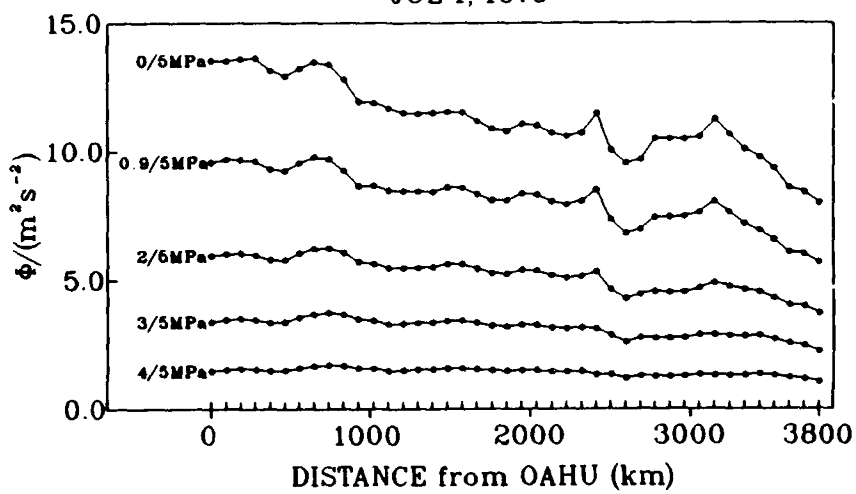
GEOPOTENTIAL ANOMALY
JUN 1, 1979

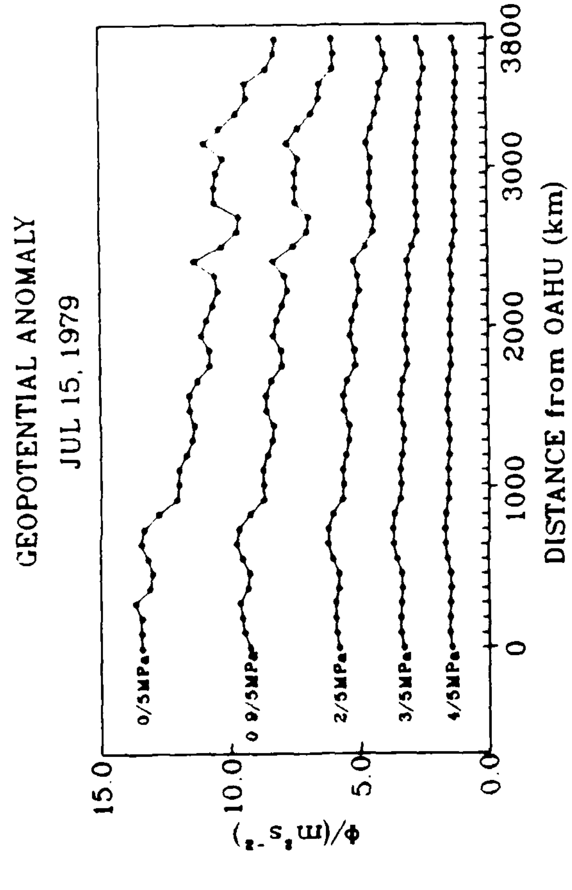


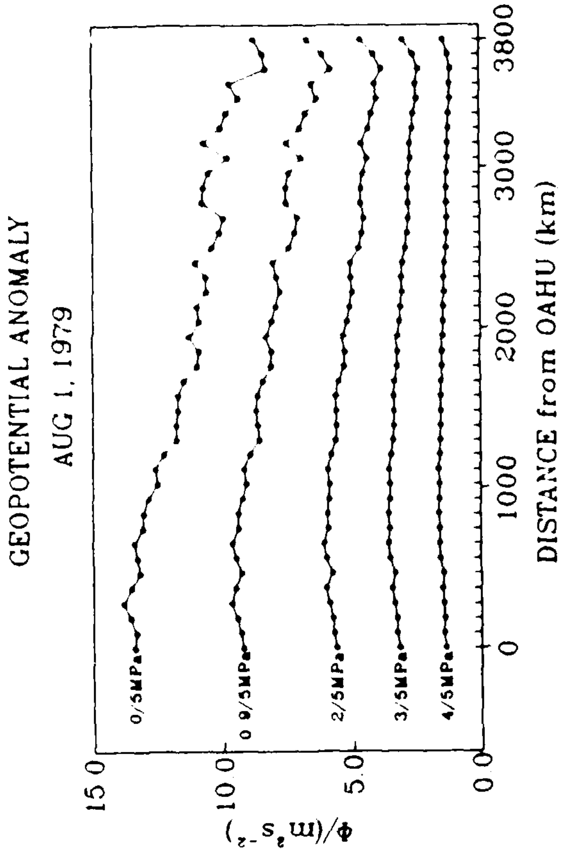
GEOPOTENTIAL ANOMALY
JUN 15, 1979

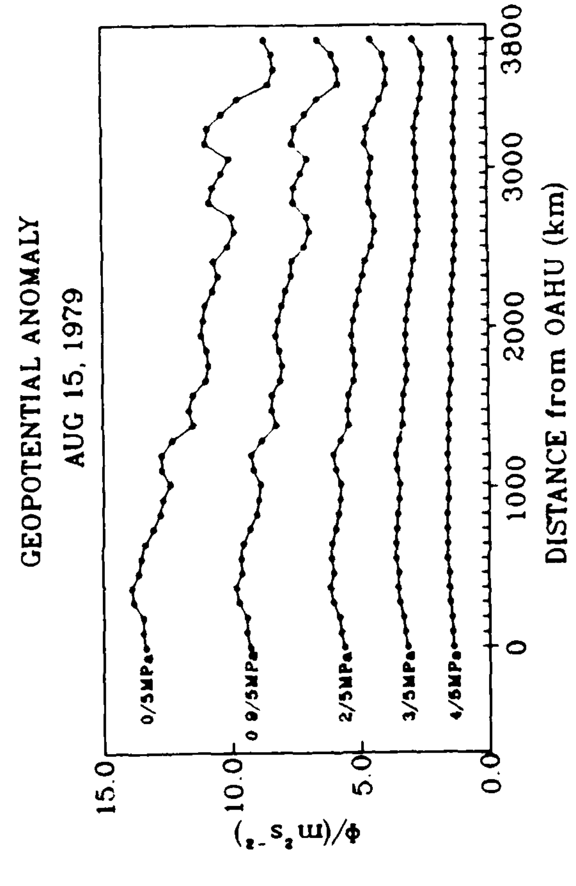


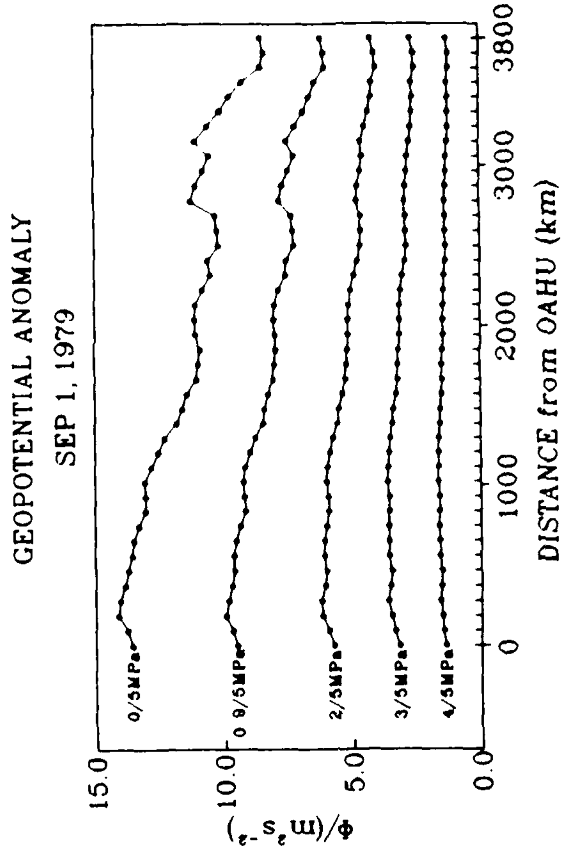
GEOPOTENTIAL ANOMALY
JUL 1, 1979

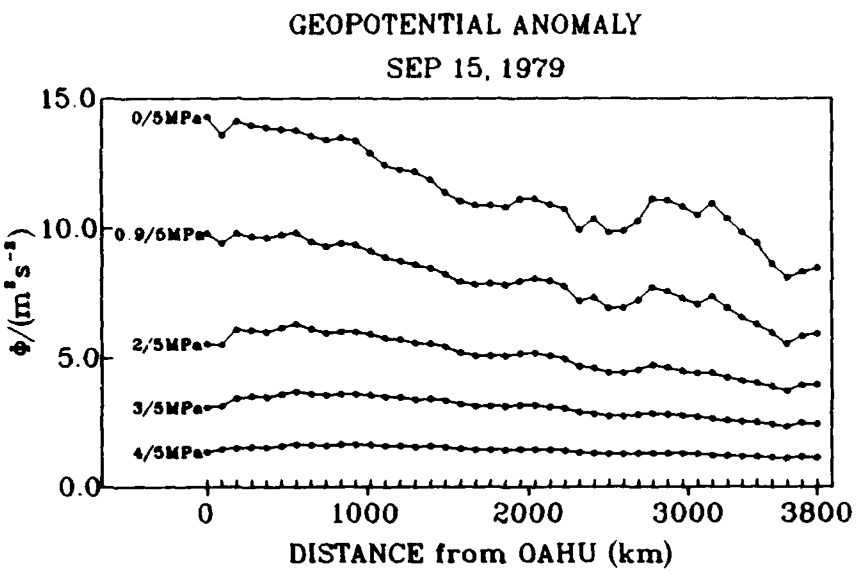


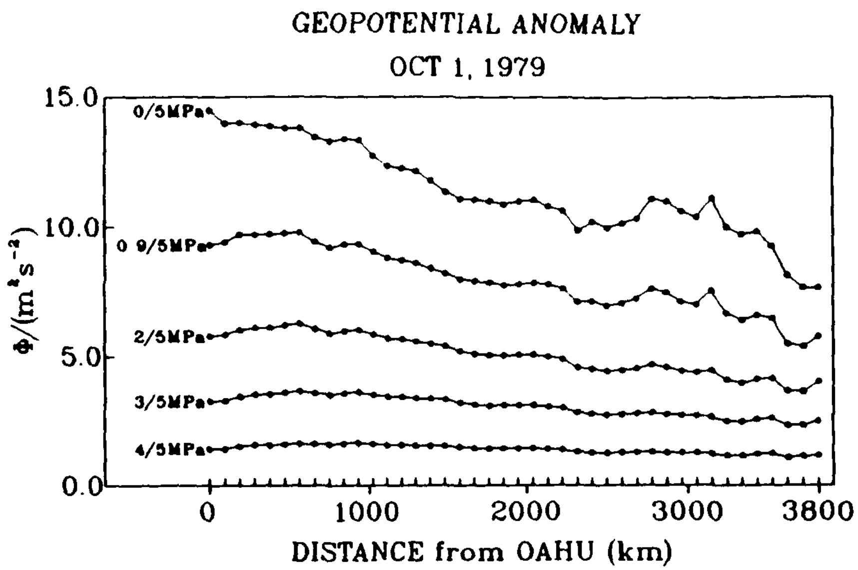

GEOPOTENTIAL ANOMALY
JUL 15, 1979
DISTANCE from OAHU (km)
Φ/(m²s⁻²)
0/5MPa
0 9/5MPa
2/5MPa
3/5MPa
4/5MPa

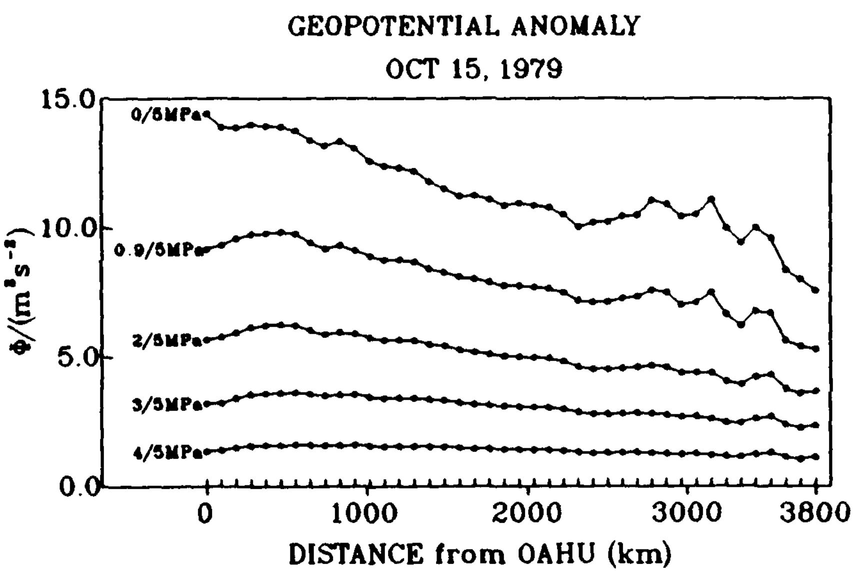

GEOPOTENTIAL ANOMALY
AUG 1, 1979
DISTANCE from OAHU (km)
Φ/(m²s⁻²)
0/5MPa
0 9/5MPa
2/5MPa
3/5MPa
4/5MPa

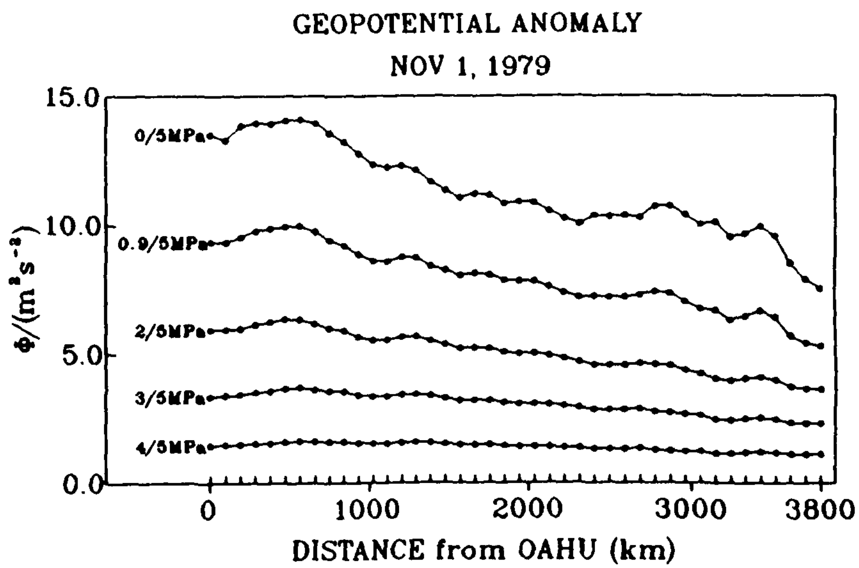

GEOPOTENTIAL ANOMALY
AUG 15, 1979
DISTANCE from OAHU (km)
Φ/(m²s⁻²)
0/5MPa
0 9/5MPa
2/5MPa
3/5MPa
4/5MPa

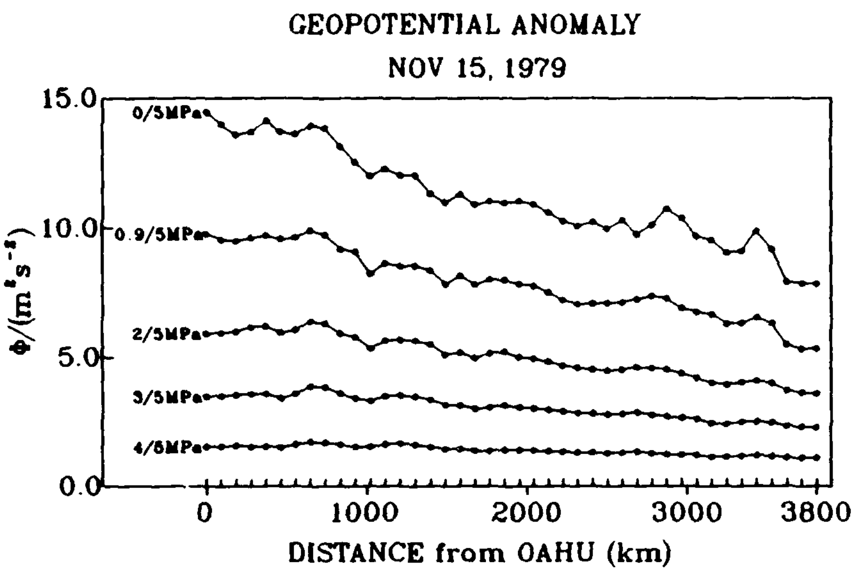

GEOPOTENTIAL ANOMALY
SEP 1, 1979
DISTANCE from OAHU (km)
Φ/(m²s⁻²)
0/5MPa
0 9/5MPa
2/5MPa
3/5MPa
4/5MPa

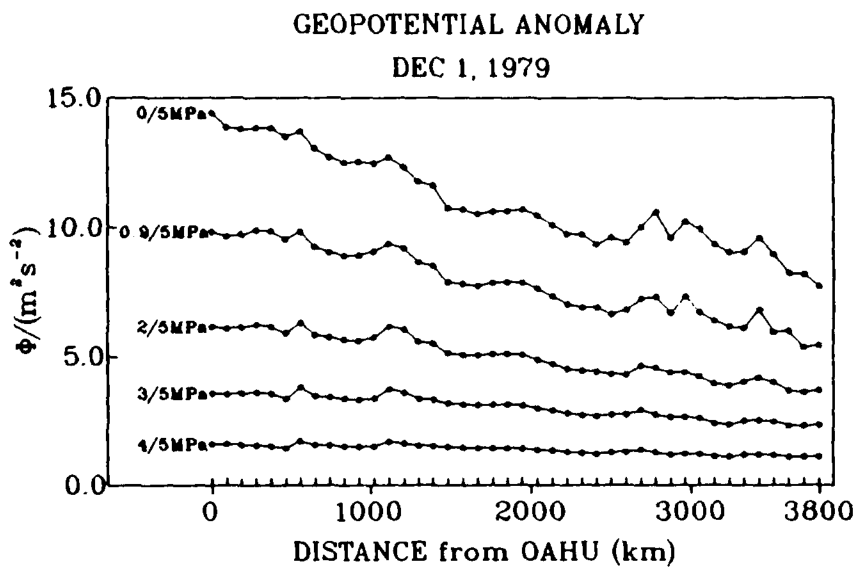

GEOPOTENTIAL ANOMALY
SEP 15, 1979
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)

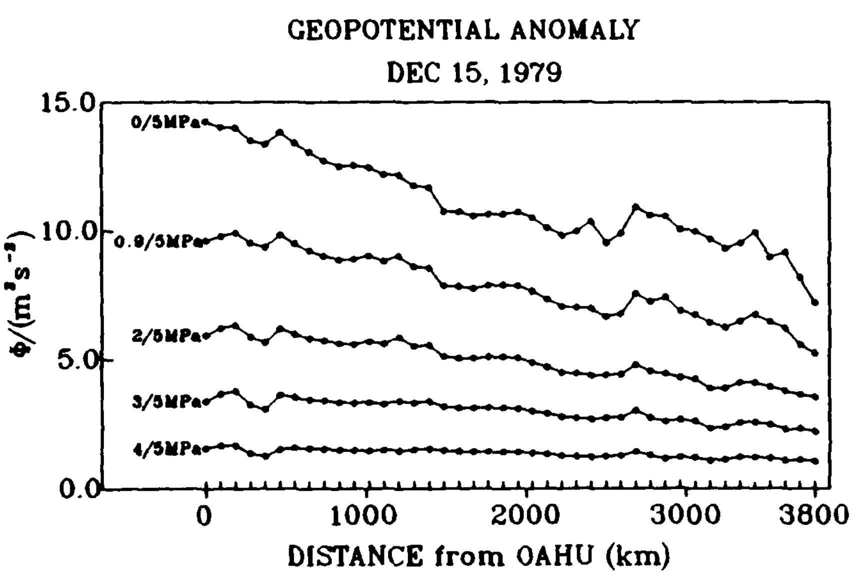

GEOPOTENTIAL ANOMALY
OCT 1, 1979
0/5MPa
0 9/5MPa
2/5MPa
3/5MPa
4/5MPa
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)

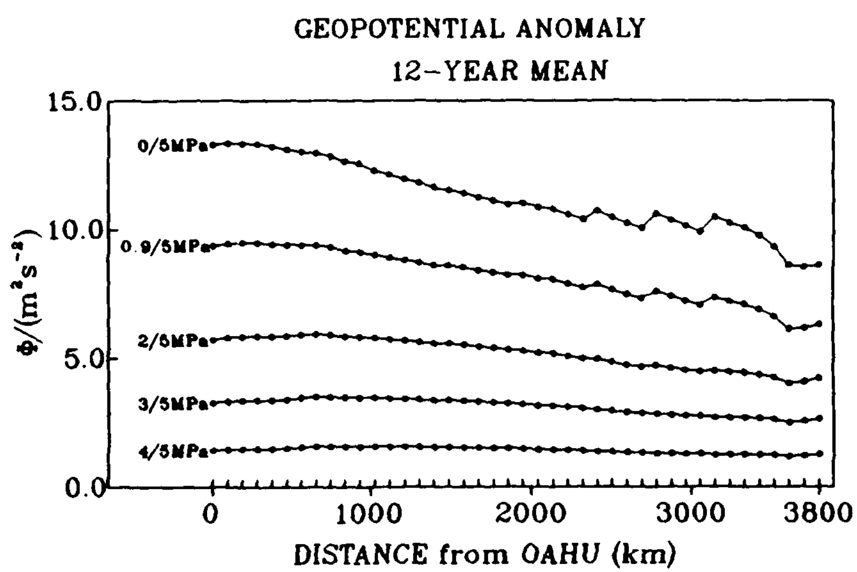

GEOPOTENTIAL ANOMALY
OCT 15, 1979
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
NOV 1, 1979
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)

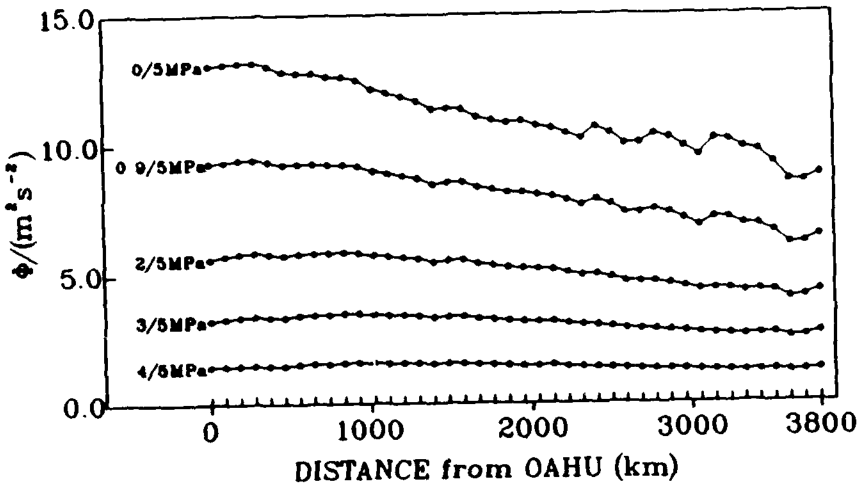

GEOPOTENTIAL ANOMALY
NOV 15, 1979
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
DEC 1, 1979
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

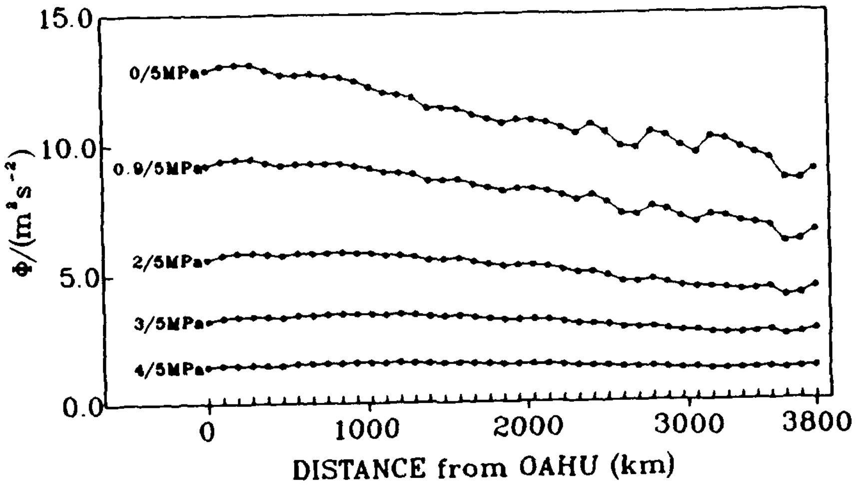

GEOPOTENTIAL ANOMALY
DEC 15, 1979
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
12-YEAR MEAN
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa
15.0
10.0
5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

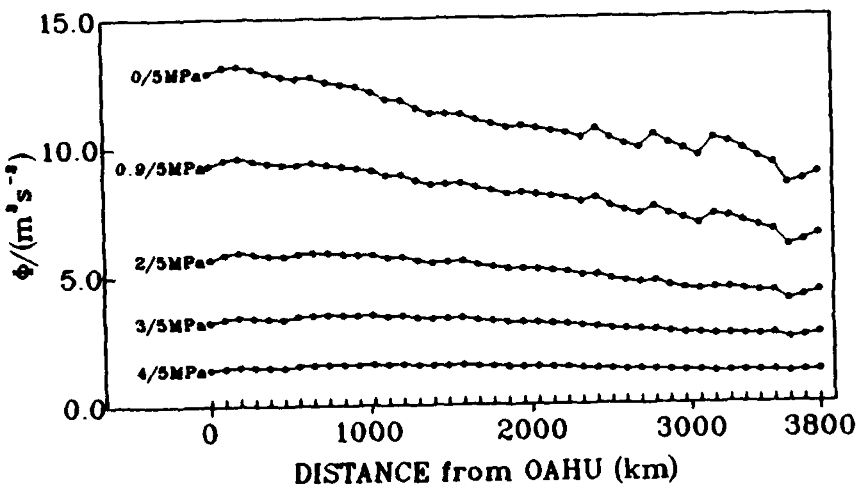
GEOPOTENTIAL ANOMALY
JAN 1 MEAN



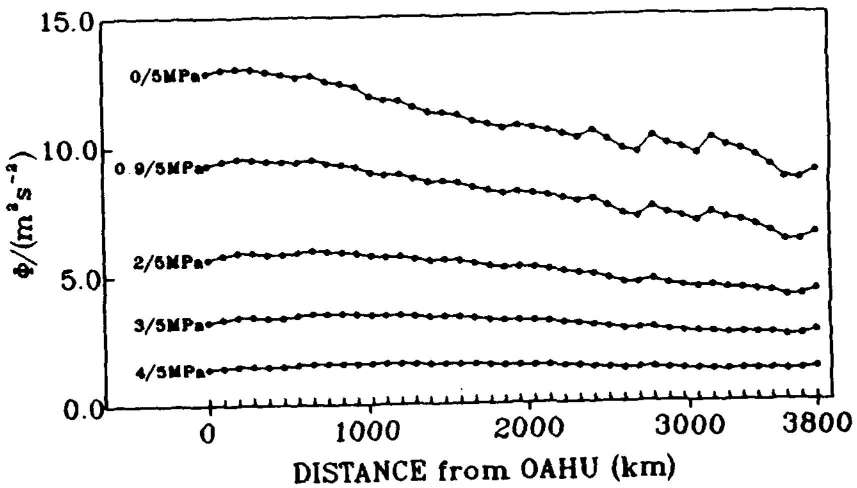
GEOPOTENTIAL ANOMALY
JAN 15 MEAN



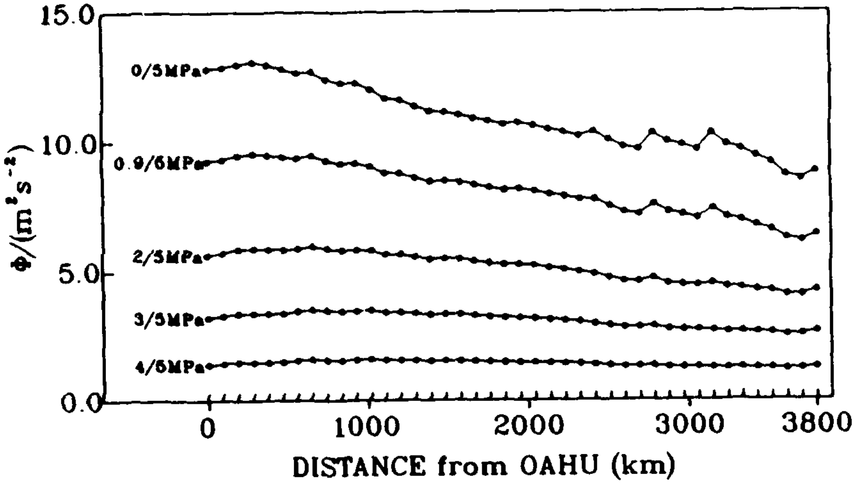
GEOPOTENTIAL ANOMALY
FEB 1 MEAN



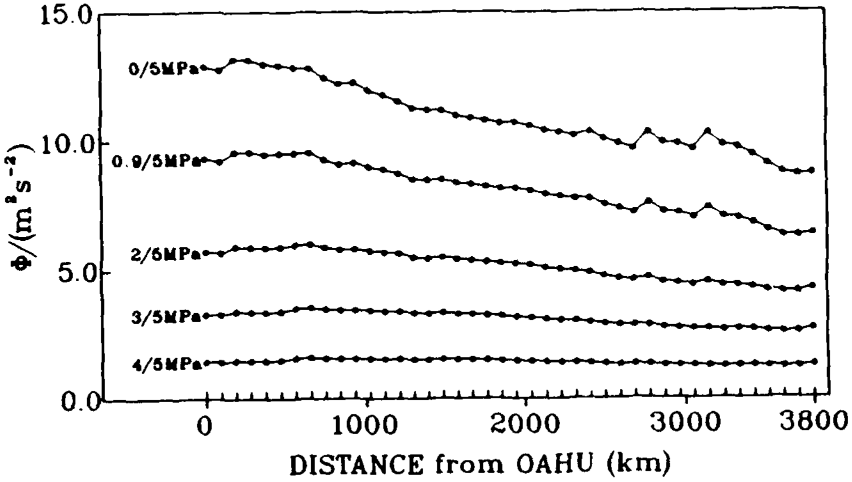
GEOPOTENTIAL ANOMALY
FEB 15 MEAN



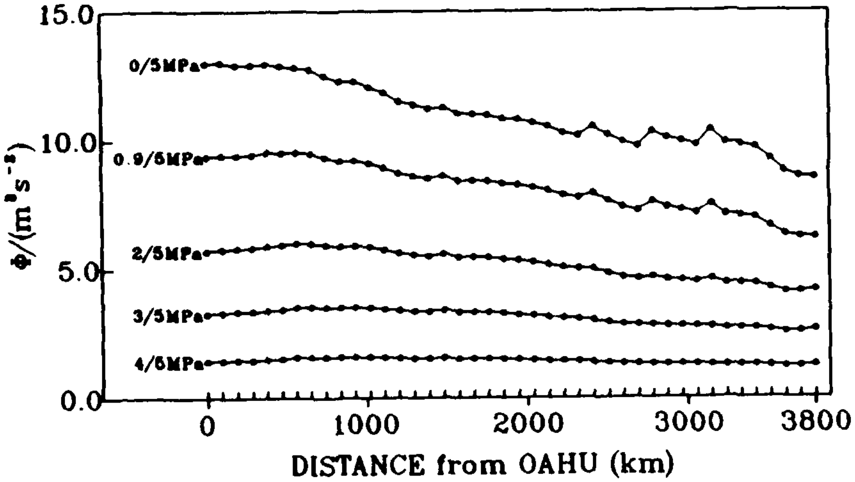
GEOPOTENTIAL ANOMALY
MAR 1 MEAN



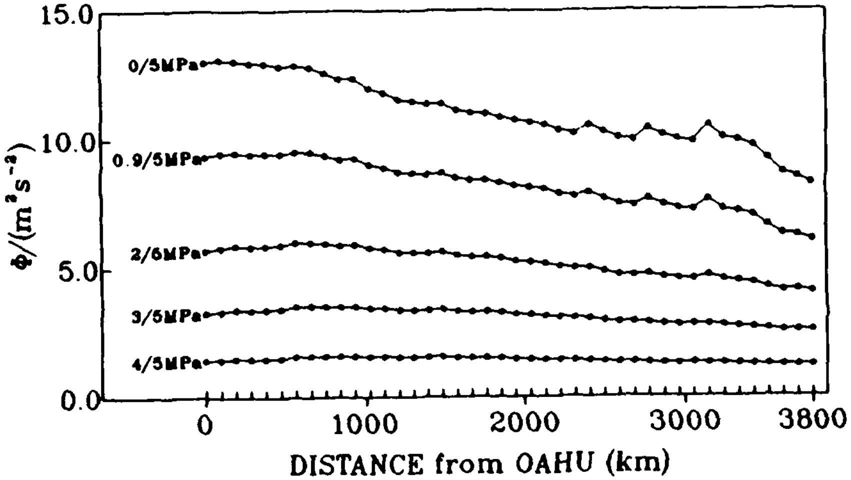
GEOPOTENTIAL ANOMALY
MAR 15 MEAN



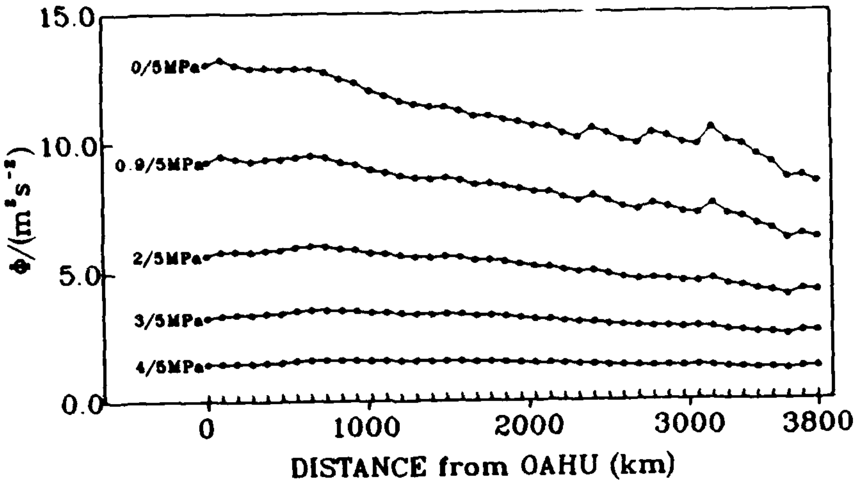
GEOPOTENTIAL ANOMALY
APR 1 MEAN



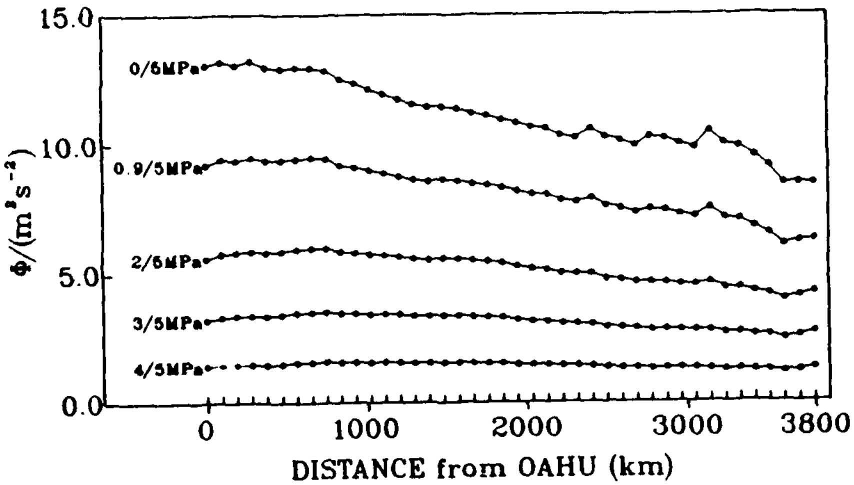
GEOPOTENTIAL ANOMALY
APR 15 MEAN



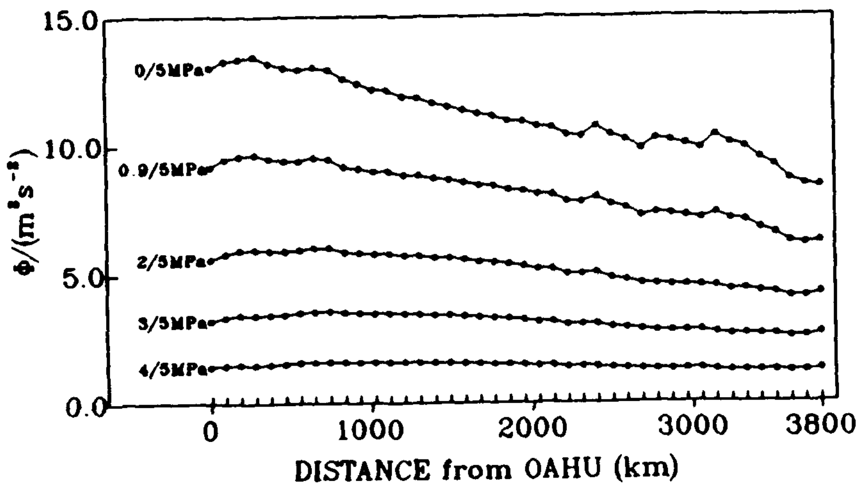
GEOPOTENTIAL ANOMALY
MAY 1 MEAN



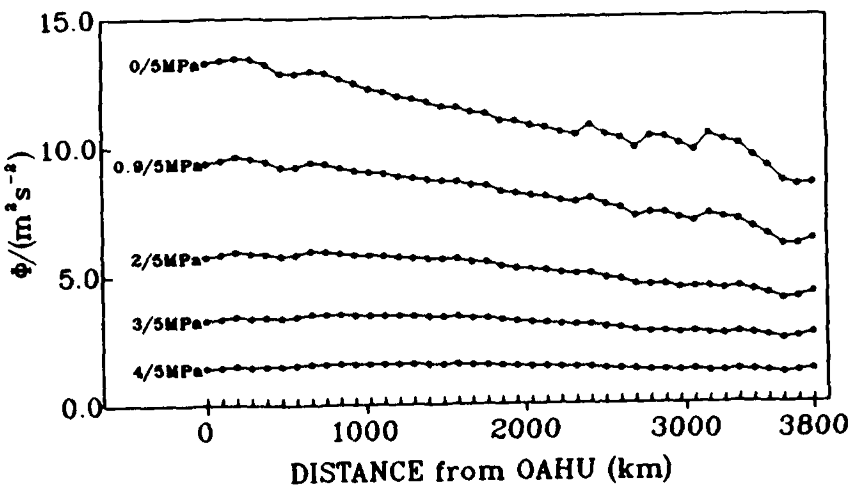
GEOPOTENTIAL ANOMALY
MAY 15 MEAN

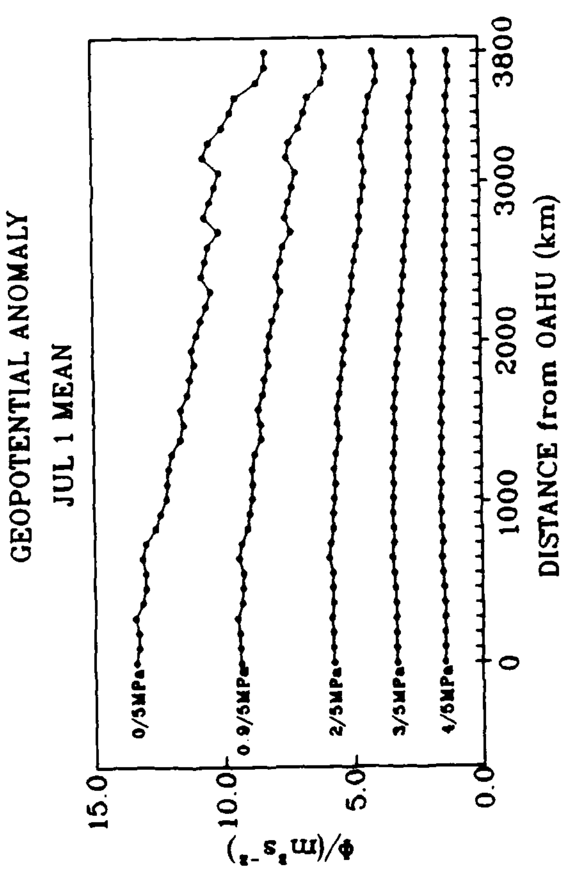


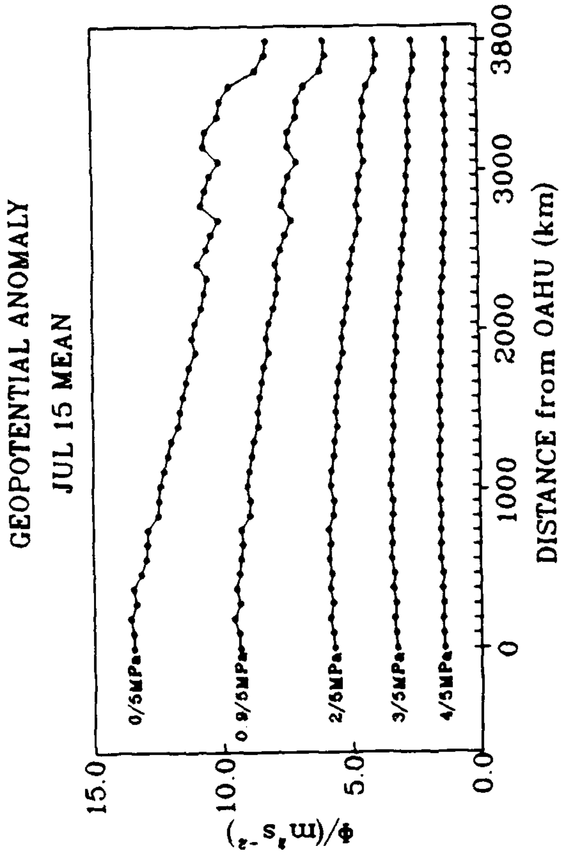
GEOPOTENTIAL ANOMALY
JUN 1 MEAN

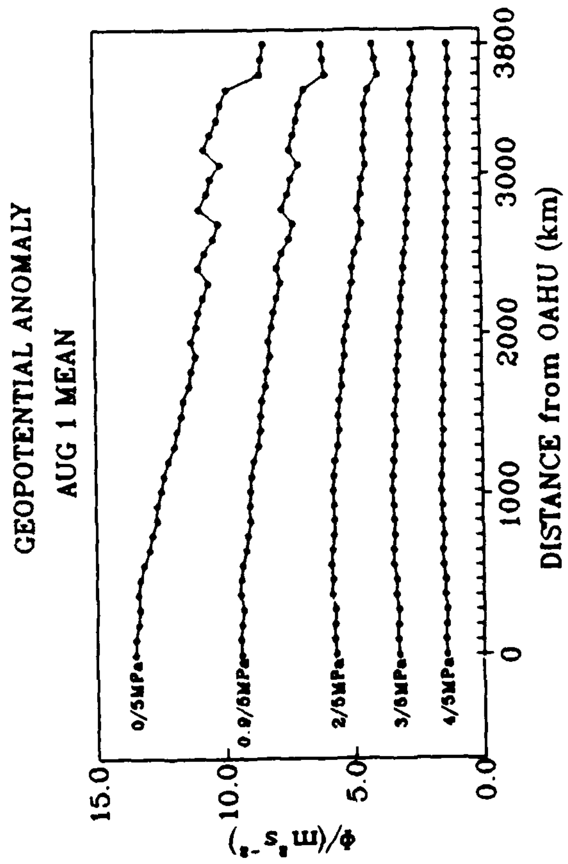


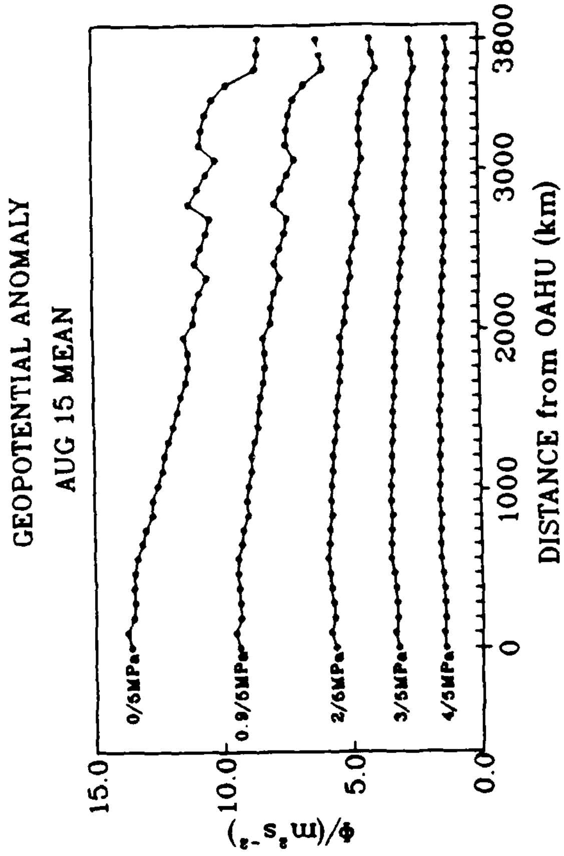
GEOPOTENTIAL ANOMALY
JUN 15 MEAN



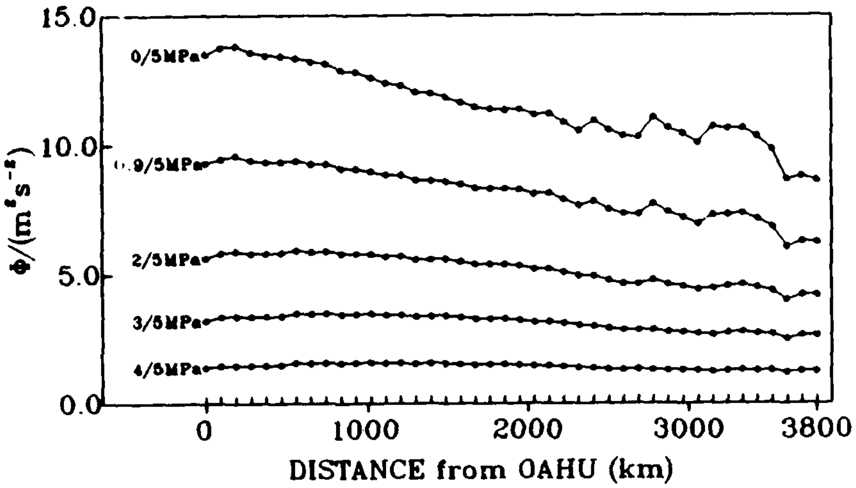

GEOPOTENTIAL ANOMALY
JUL 1 MEAN
Φ/(m² s⁻²)
15.0
10.0
5.0
0.0
DISTANCE from OAHU (km)
0
1000
2000
3000
3800
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa


GEOPOTENTIAL ANOMALY
JUL 15 MEAN
Φ/(m² s⁻²)
15.0
10.0
5.0
0.0
DISTANCE from OAHU (km)
0
1000
2000
3000
3800
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa

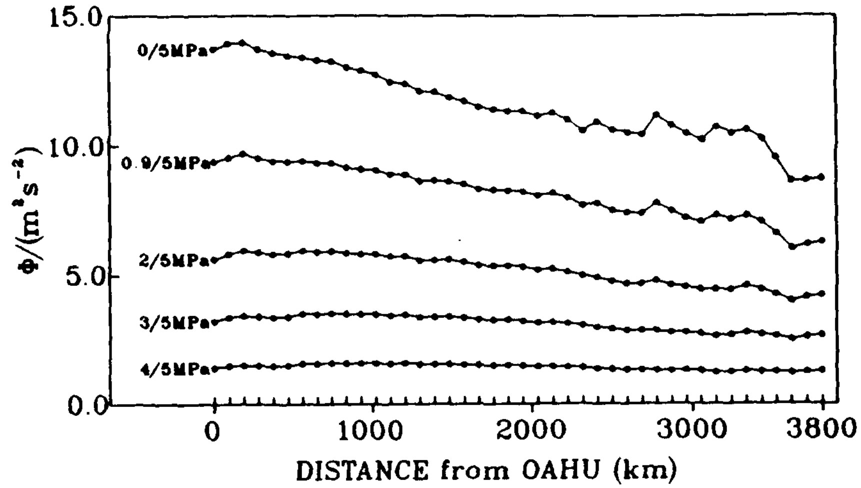

GEOPOTENTIAL ANOMALY
AUG 1 MEAN
Φ/(m² s⁻²)
15.0
10.0
5.0
0.0
DISTANCE from OAHU (km)
0
1000
2000
3000
3800
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa


GEOPOTENTIAL ANOMALY
AUG 15 MEAN
Φ/(m² s⁻²)
15.0
10.0
5.0
0.0
DISTANCE from OAHU (km)
0
1000
2000
3000
3800
0/5MPa
0.9/5MPa
2/5MPa
3/5MPa
4/5MPa

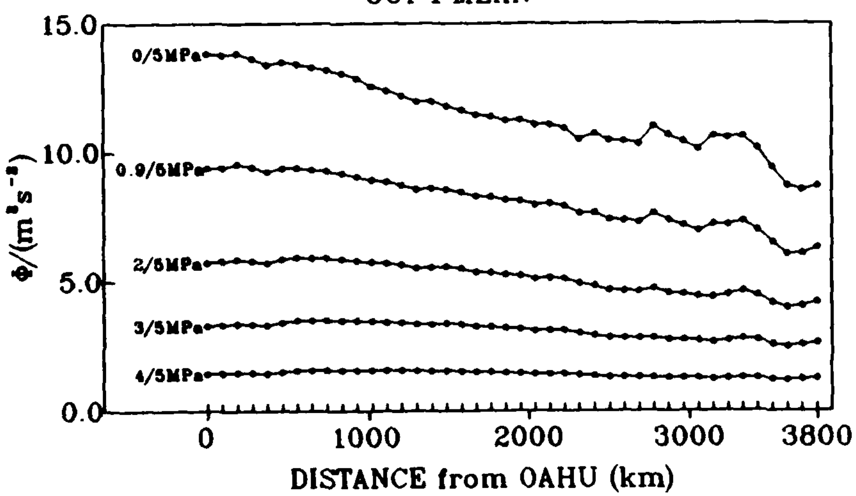
GEOPOTENTIAL ANOMALY
SEP 1 MEAN



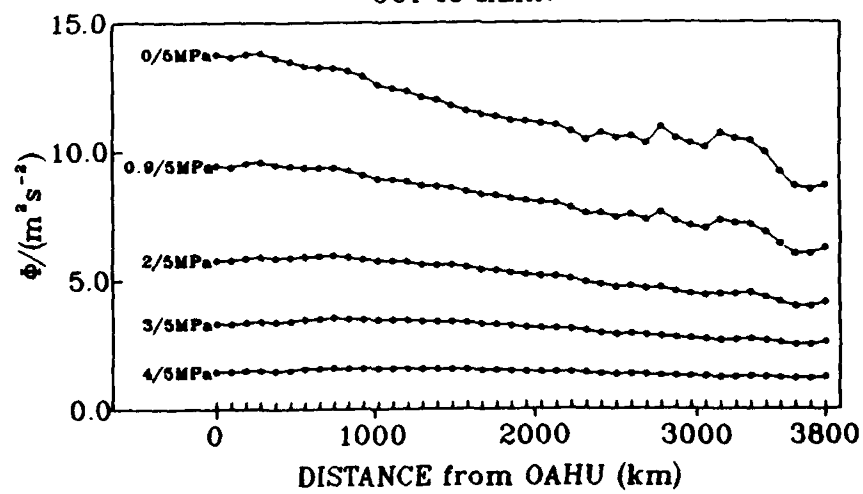
GEOPOTENTIAL ANOMALY
SEP 15 MEAN



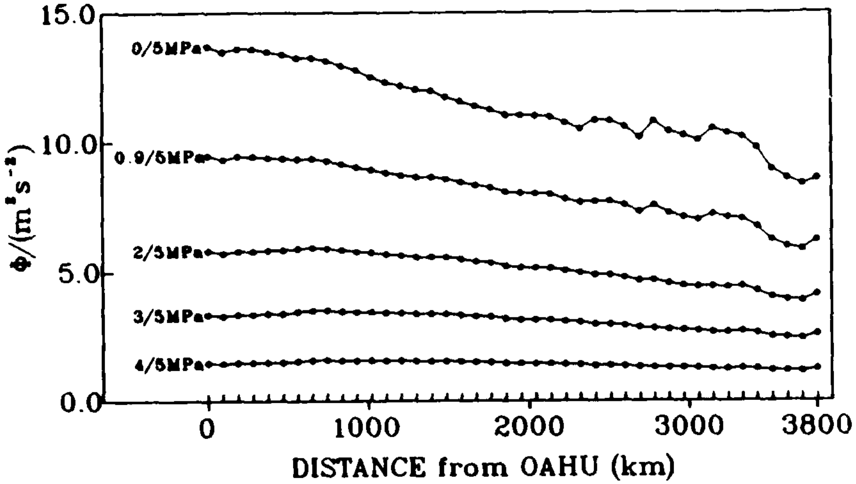
GEOPOTENTIAL ANOMALY
OCT 1 MEAN



GEOPOTENTIAL ANOMALY
OCT 15 MEAN



GEOPOTENTIAL ANOMALY
NOV 1 MEAN



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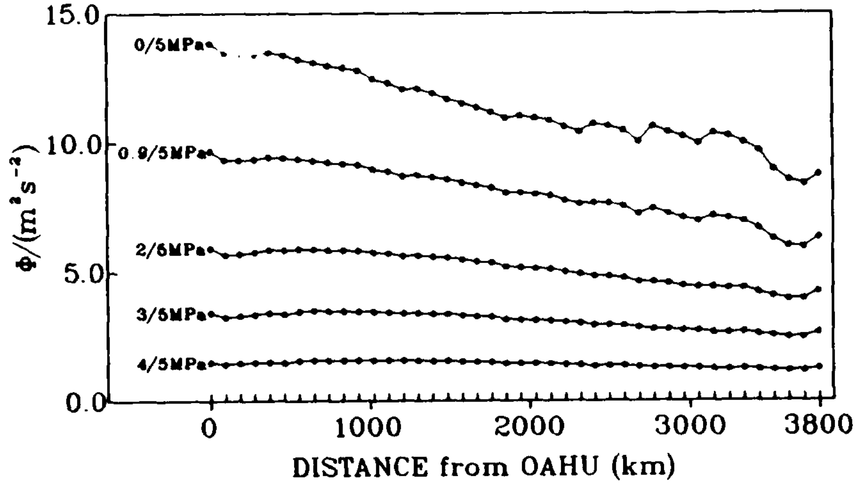
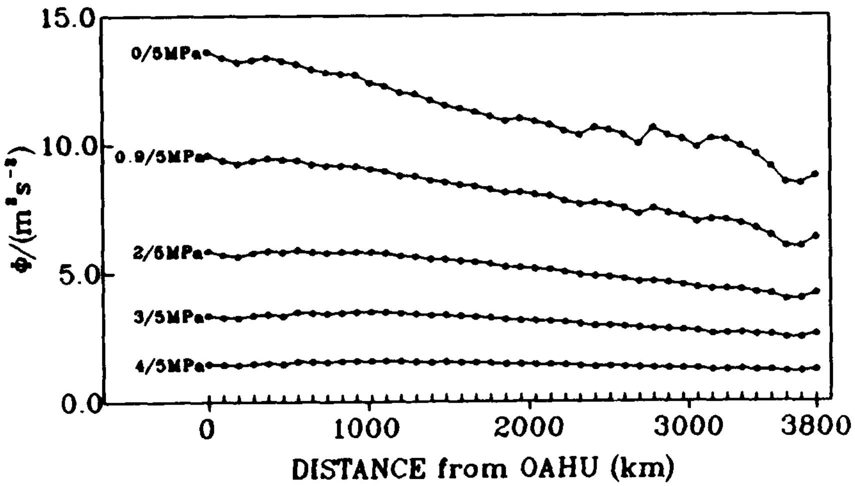
NOV 15 MEAN



GEOPOTENTIAL ANOMALY
DEC 1 MEAN



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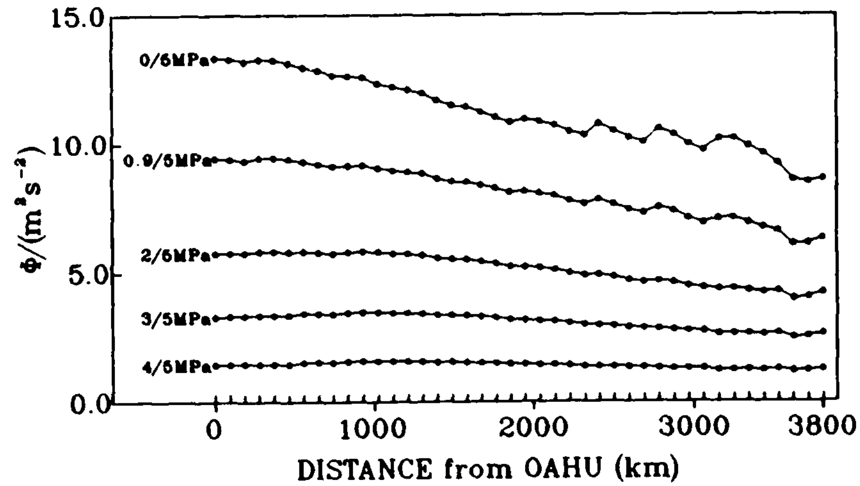
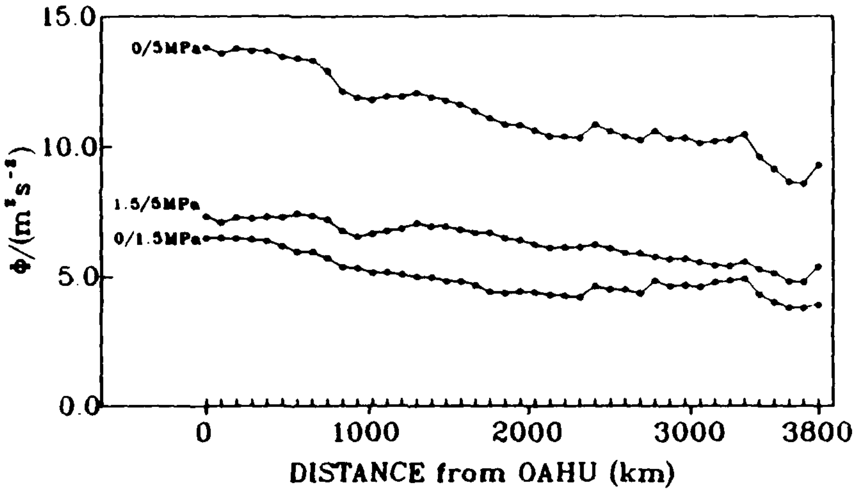
DEC 15 MEAN

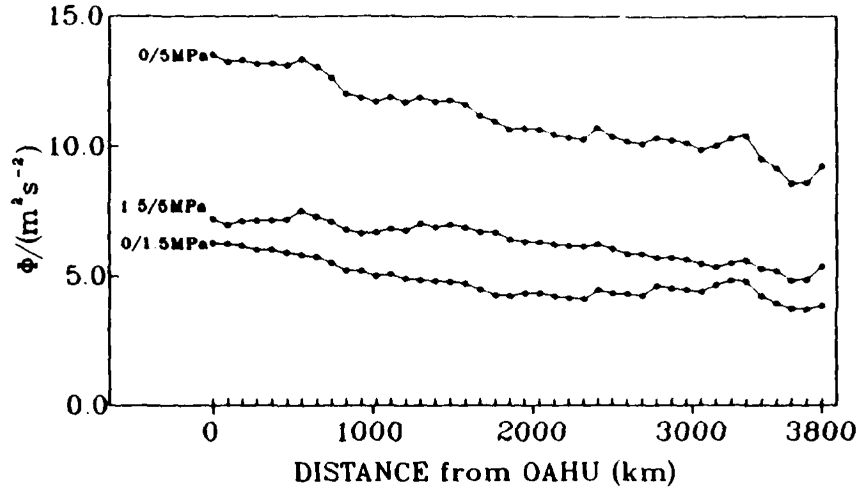


Geopotential Anomalies 0/5 MPa; 1.5/5 MPa; 0/1.5 MPa,
The 12-Year Average over 1968 through 1979,
Averages over each Semi-month

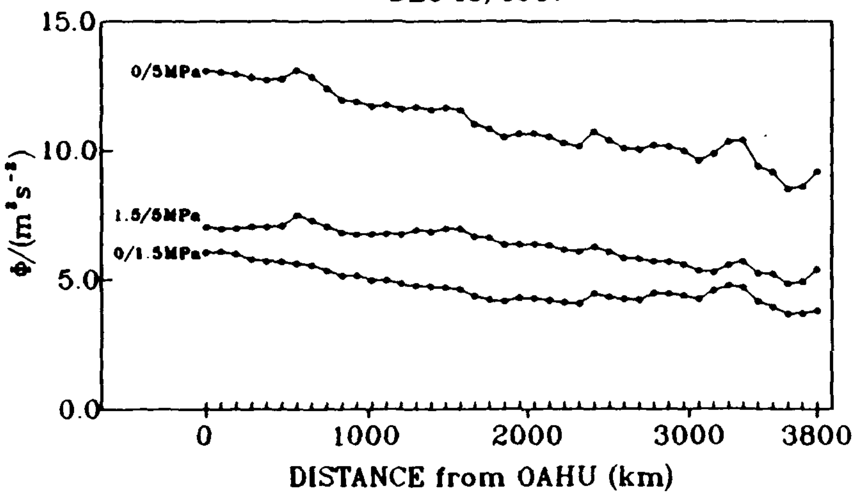
GEOPOTENTIAL ANOMALY
NOV 15, 1967



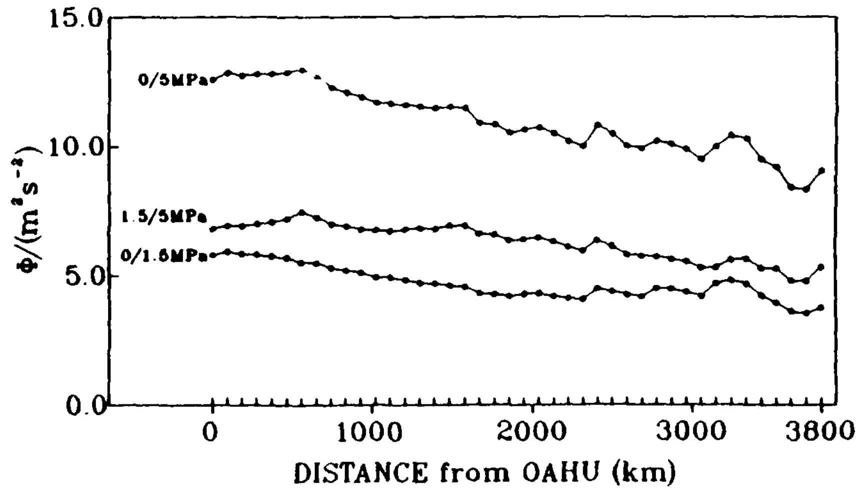
GEOPOTENTIAL ANOMALY
DEC 1, 1967

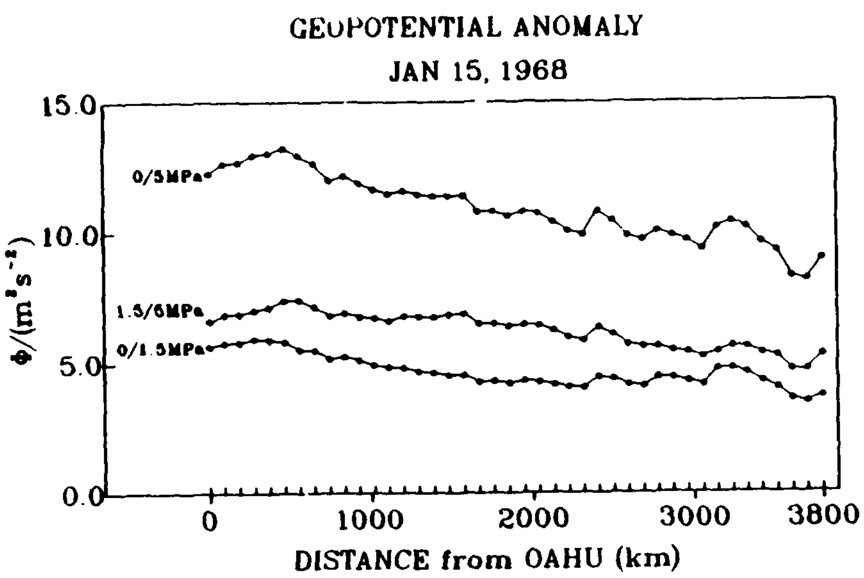


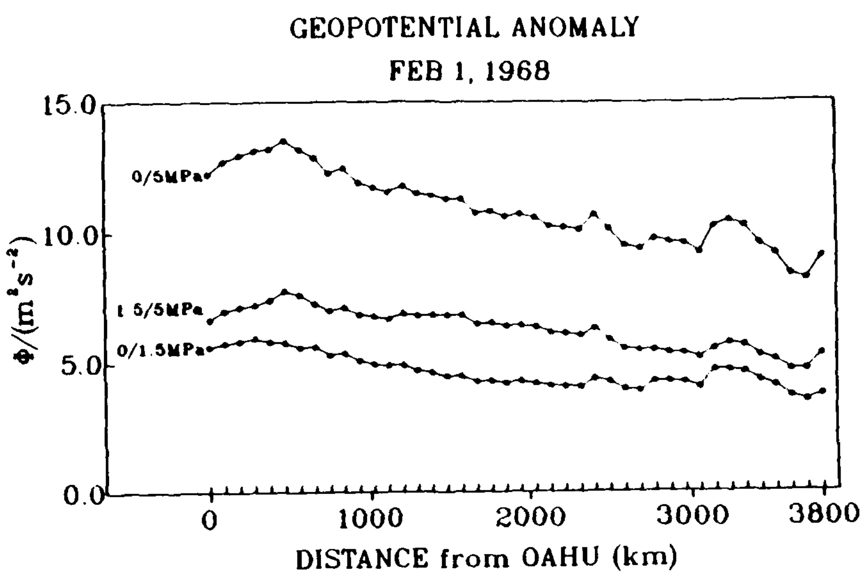
GEOPOTENTIAL ANOMALY
DEC 15, 1967



GEOPOTENTIAL ANOMALY
JAN 1, 1968




GEOPOTENTIAL ANOMALY
JAN 15, 1968
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
15.0
10.0
5.0
0.0
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 1, 1968
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
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5.0
0.0
0
1000
2000
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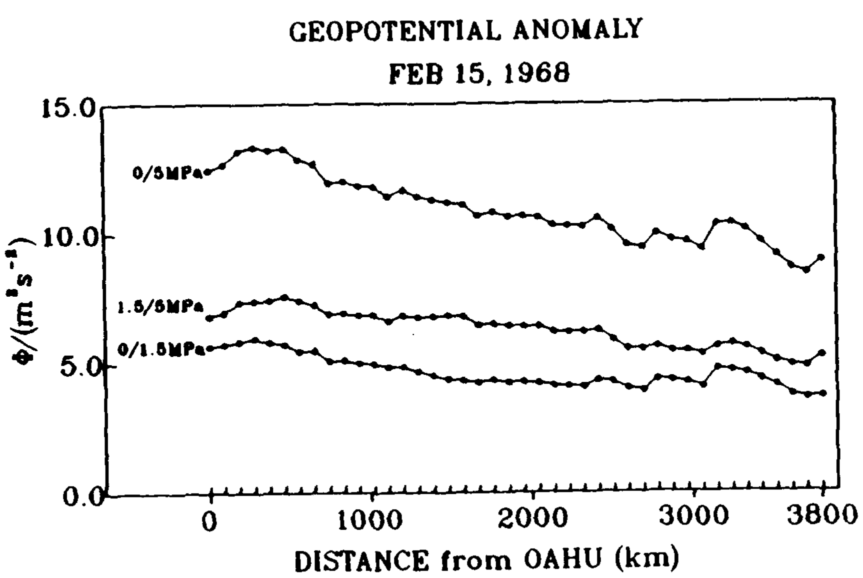
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 15, 1968
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1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
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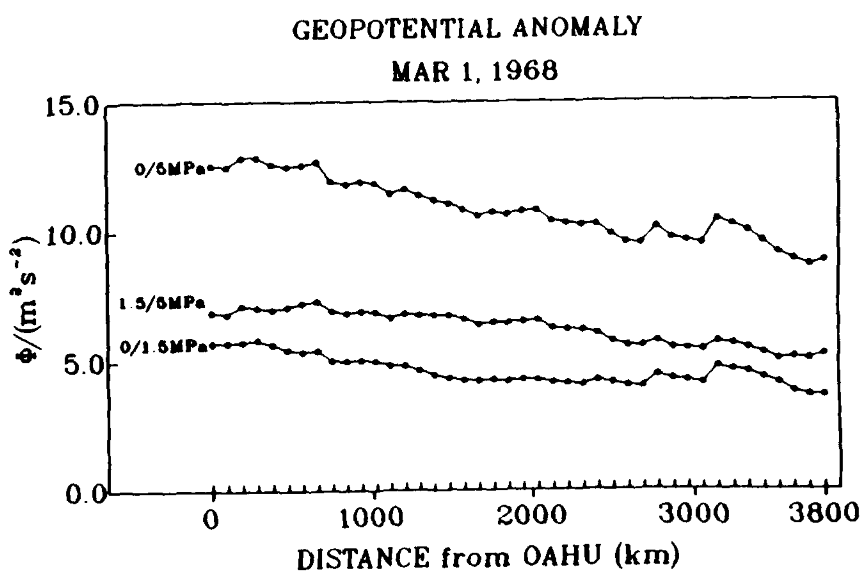
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAR 1, 1968
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1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
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1000
2000
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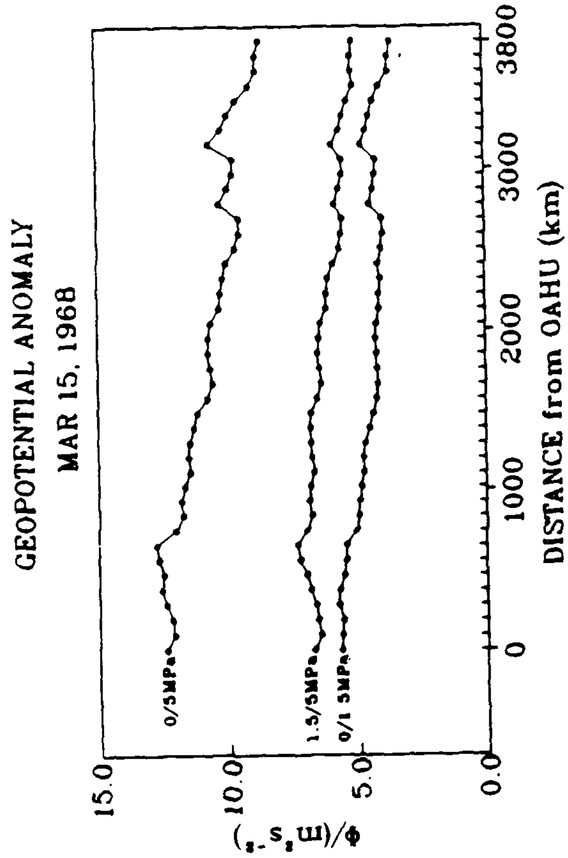
3800
DISTANCE from OAHU (km)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0/1.5MPa
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Φ/(m²s⁻²)
0
1000
2000
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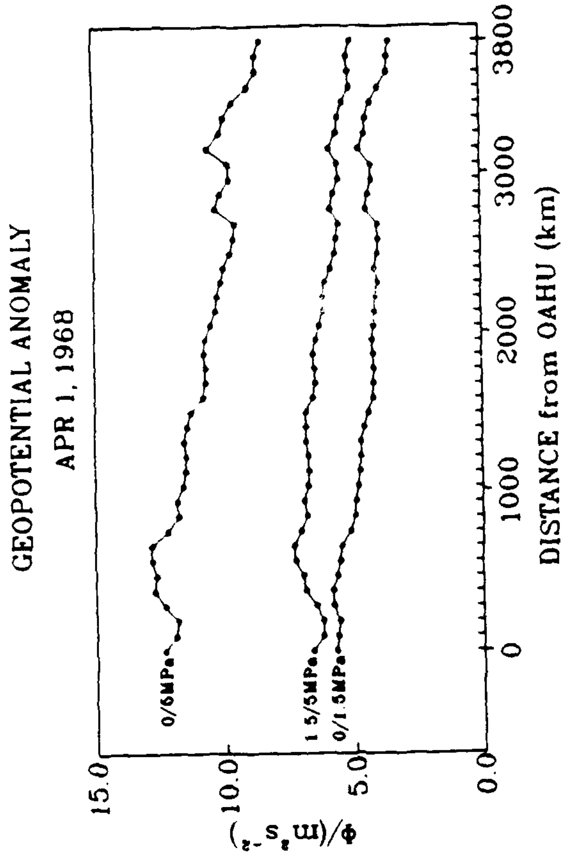
DISTANCE from OAHU (km)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1.5/5MPa
0/1.5MPa
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0.0
Φ/(m²s⁻²)
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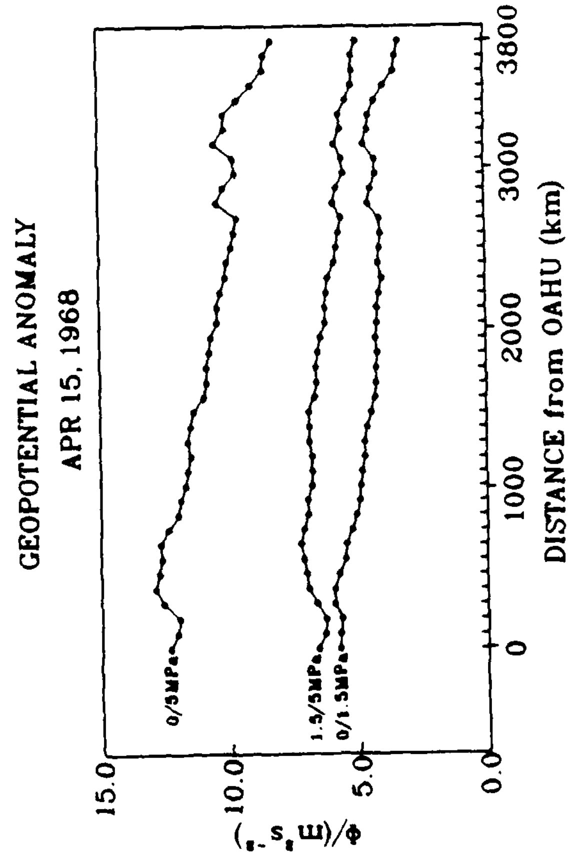
1000
2000
3000
3800
DISTANCE from OAHU (km)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1.5/5MPa
0/1.5MPa
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0.0
Φ/(m²s⁻²)
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1000
2000
3000
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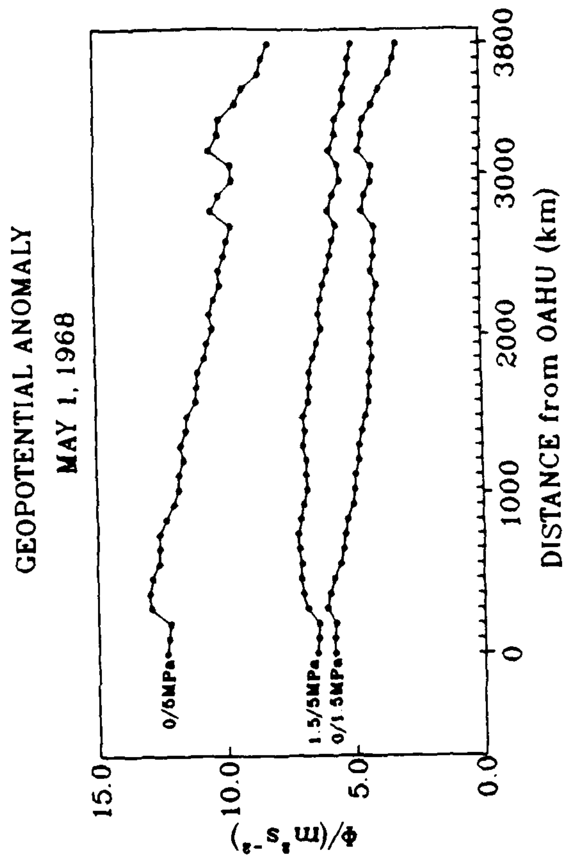
DISTANCE from OAHU (km)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0/1.5MPa
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0.0
Φ/(m²s⁻²)
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1000
2000
3000
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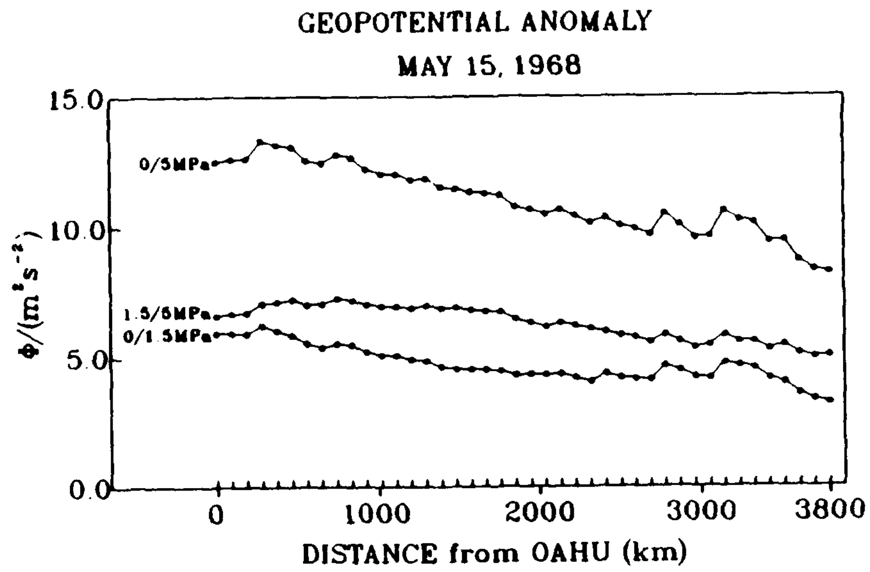
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
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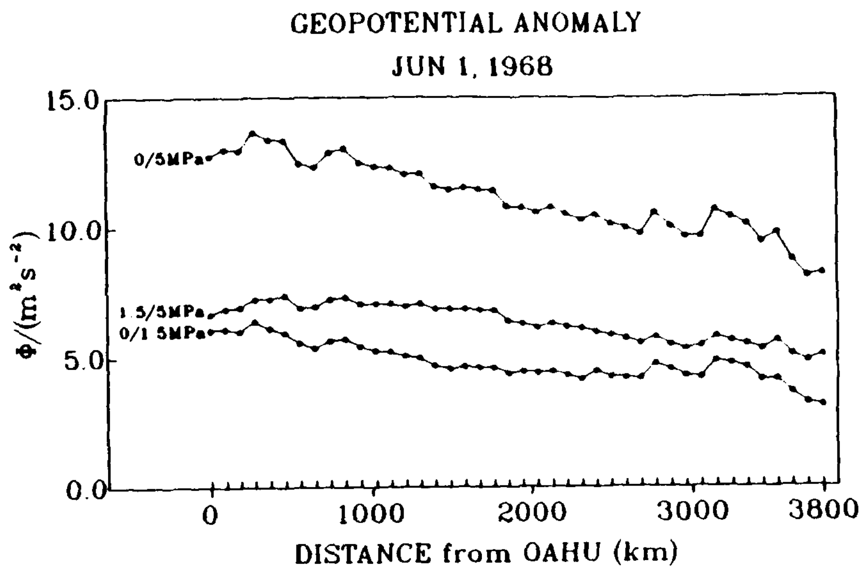
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUN 1, 1968
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
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5.0
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1000
2000
3000
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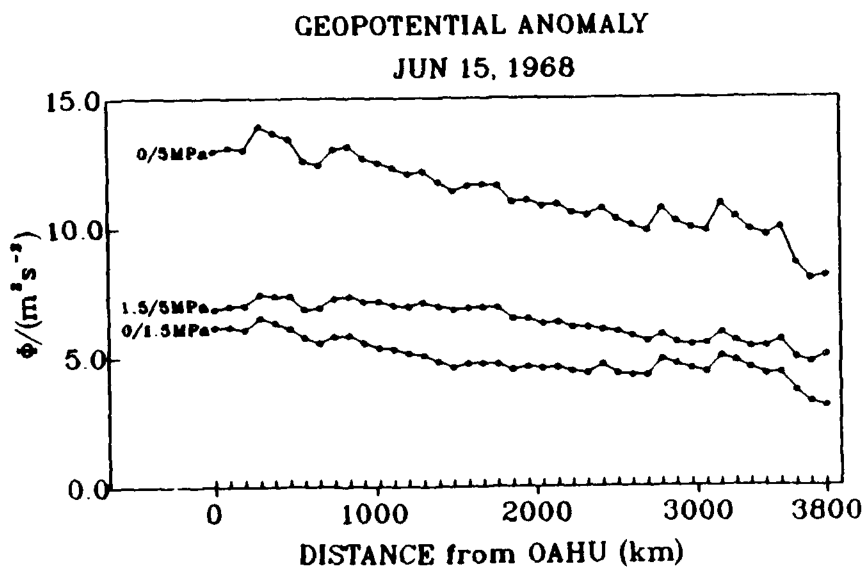
DISTANCE from OAHU (km)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0/1.5MPa
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2000
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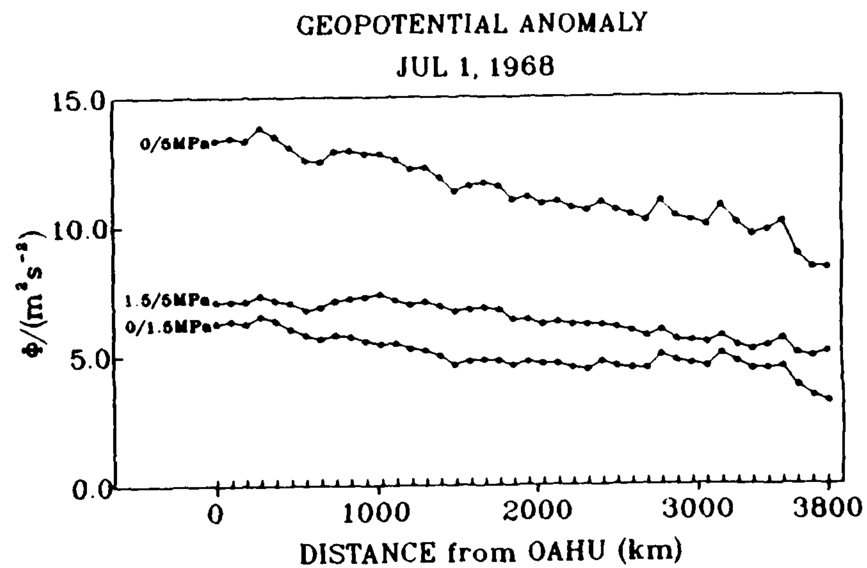
DISTANCE from OAHU (km)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0/1.5MPa
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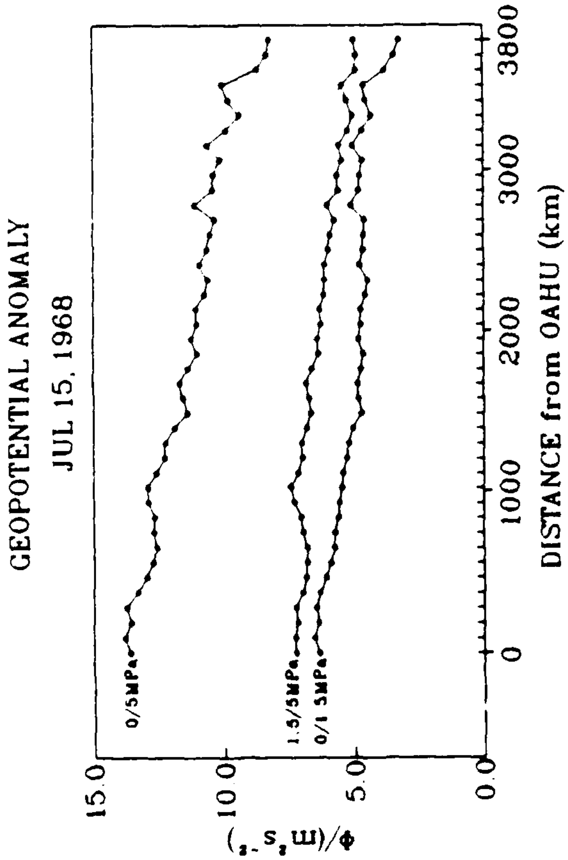
DISTANCE from OAHU (km)



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1000
2000
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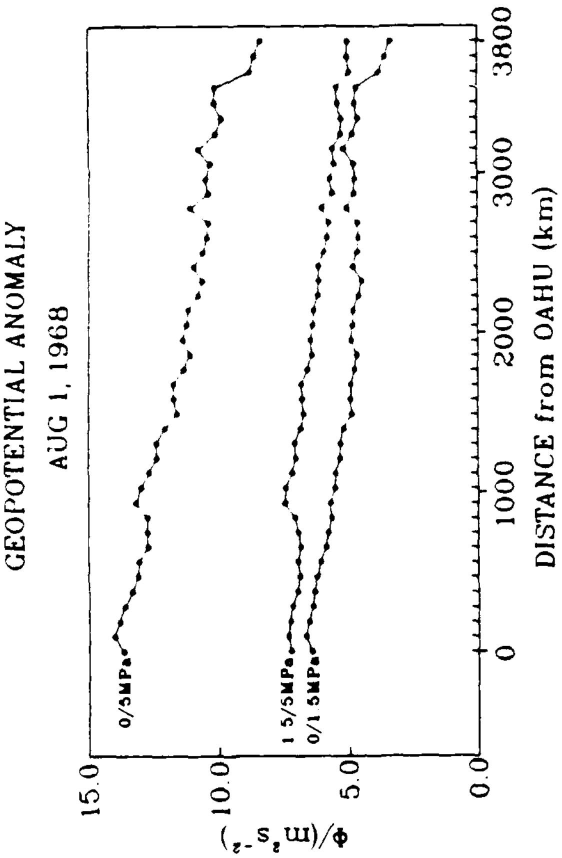
DISTANCE from OAHU (km)



GEOPOTENTIAL ANOMALY
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1.5/5MPa
0/1.5MPa
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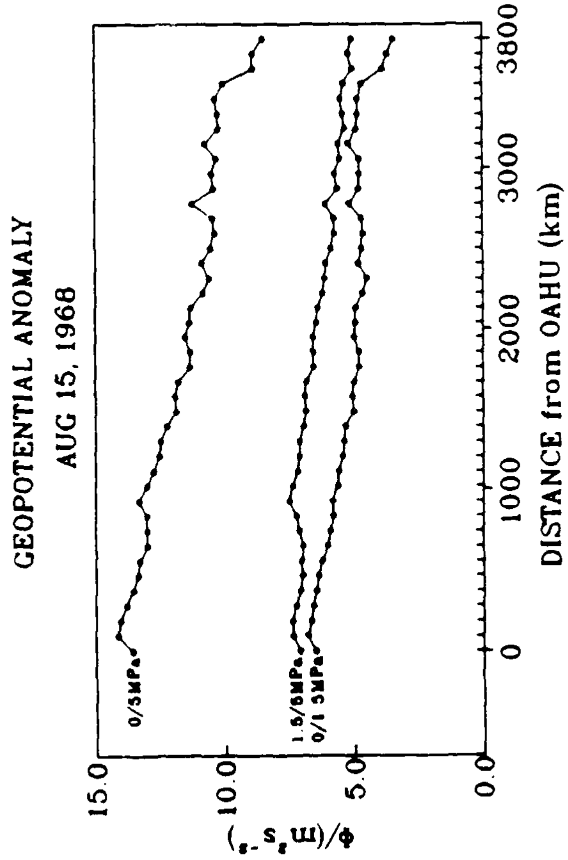
DISTANCE from OAHU (km)



GEOPOTENTIAL ANOMALY
AUG 15, 1968
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1.5/5MPa
0/1.5MPa
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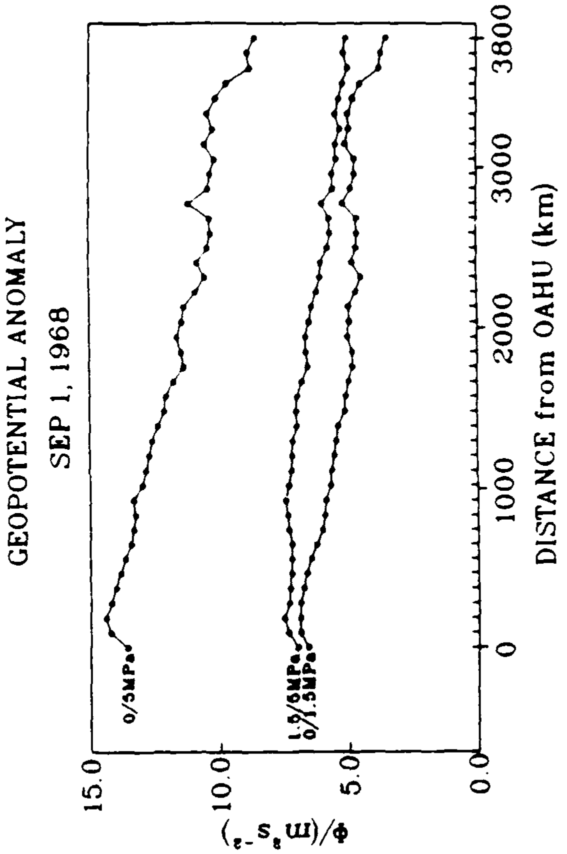
DISTANCE from OAHU (km)



GEOPOTENTIAL ANOMALY
SEP 1, 1968
0/5MPa
1.5/5MPa
0/1.5MPa
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2000
3000
3800
DISTANCE from OAHU (km)

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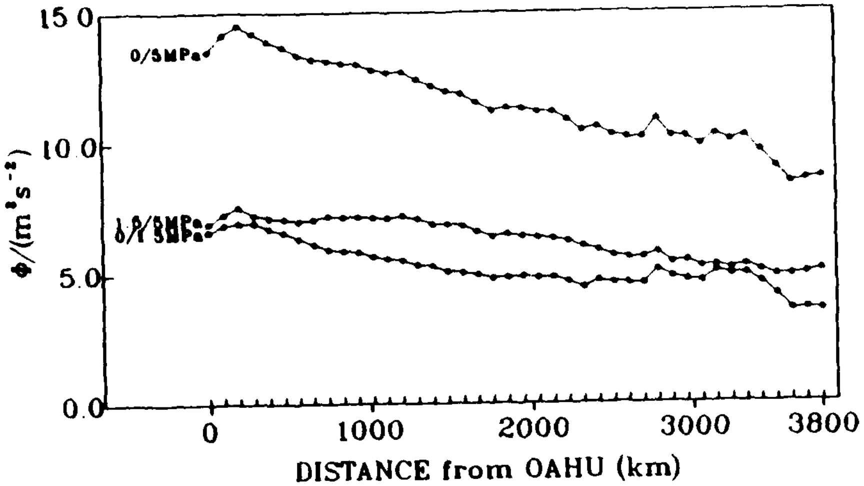
SEP 15, 1968



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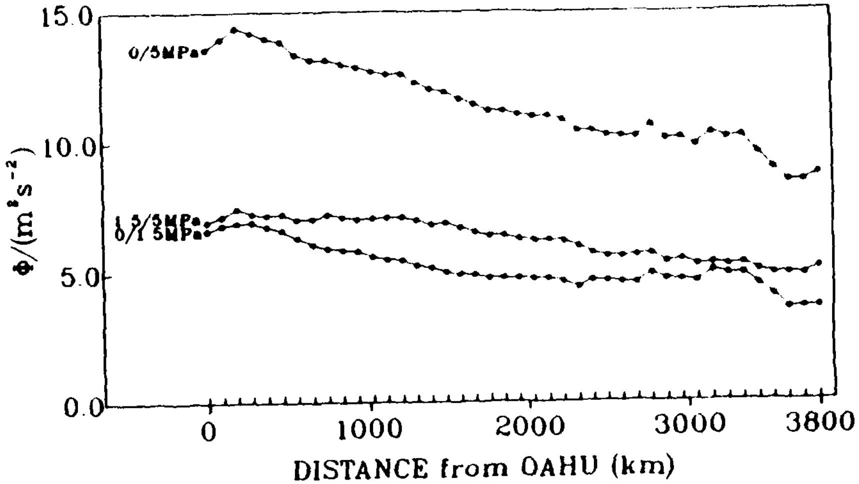

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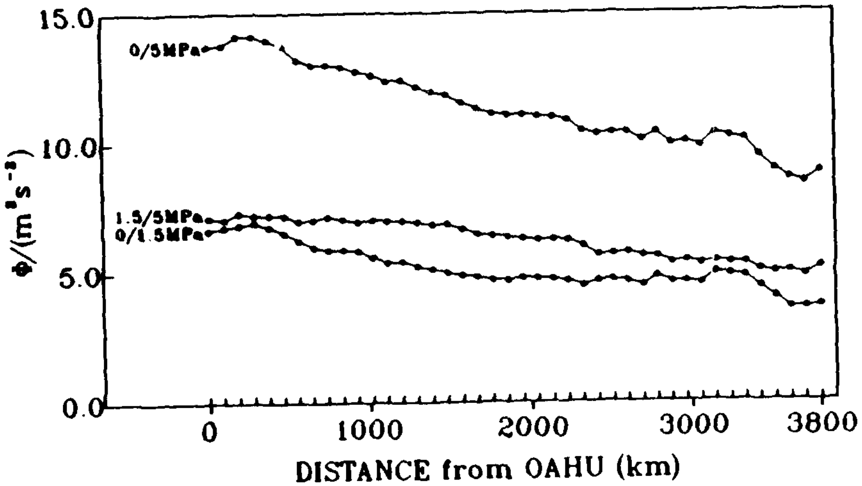

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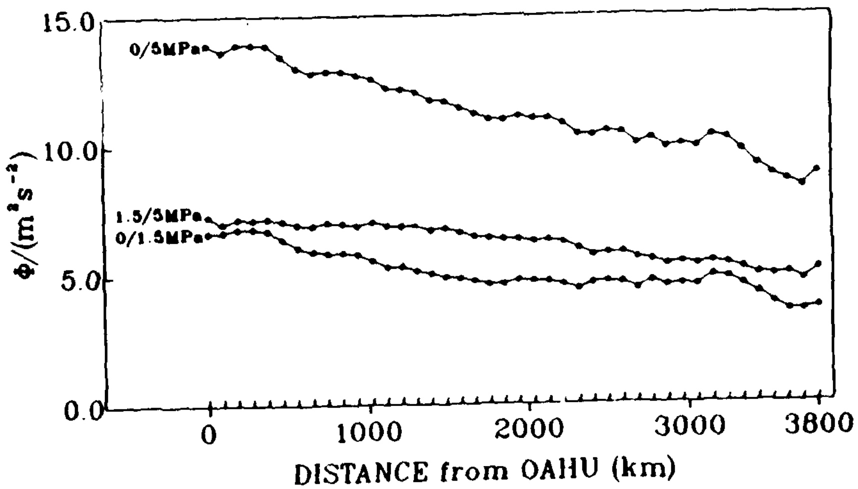

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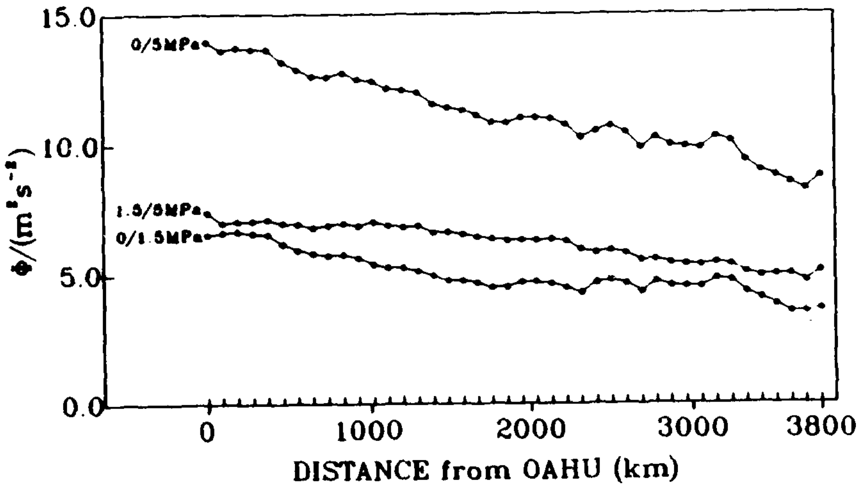

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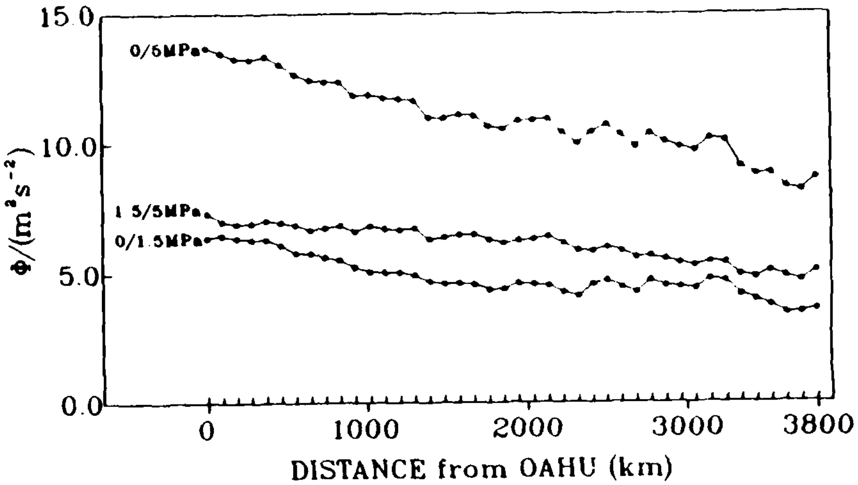

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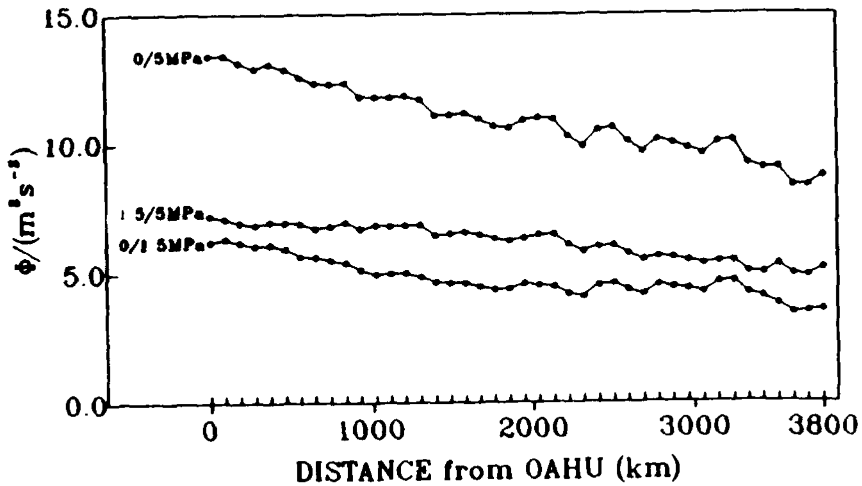
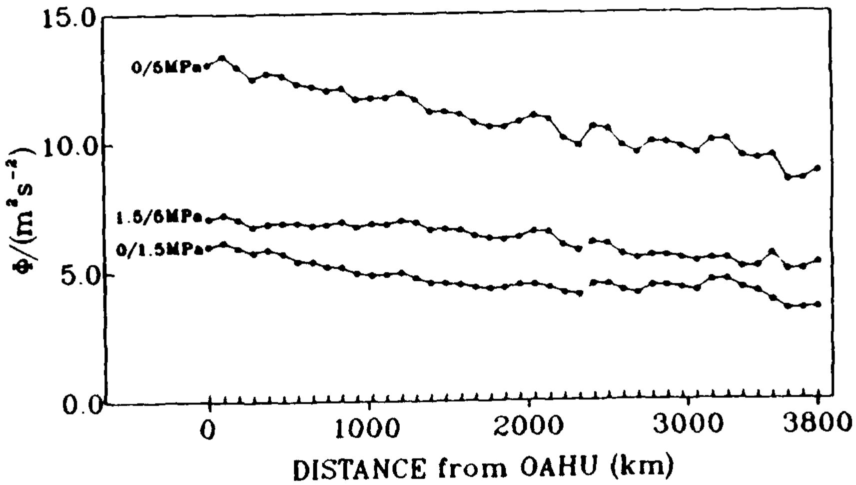


GEOPOTENTIAL ANOMALY
JAN 1, 1969



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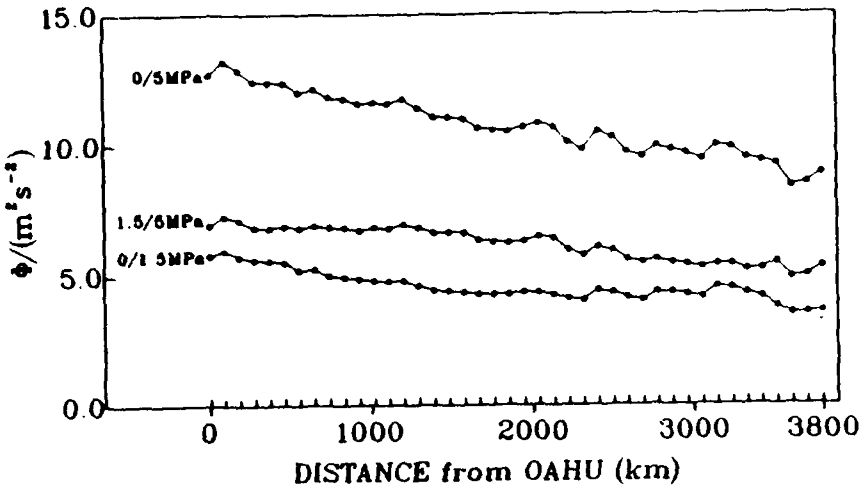

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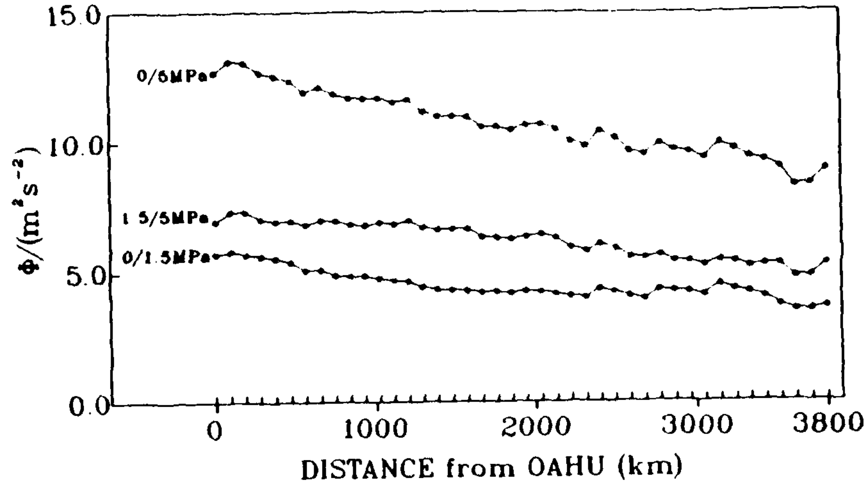
FEB 1, 1969



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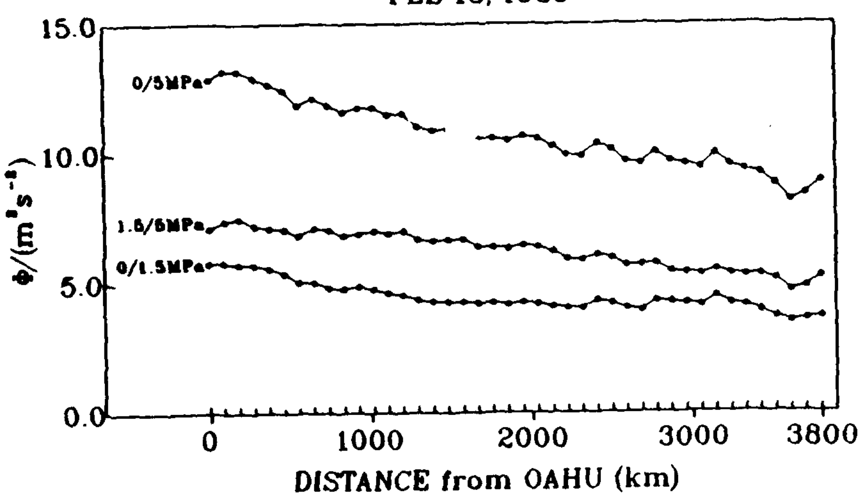
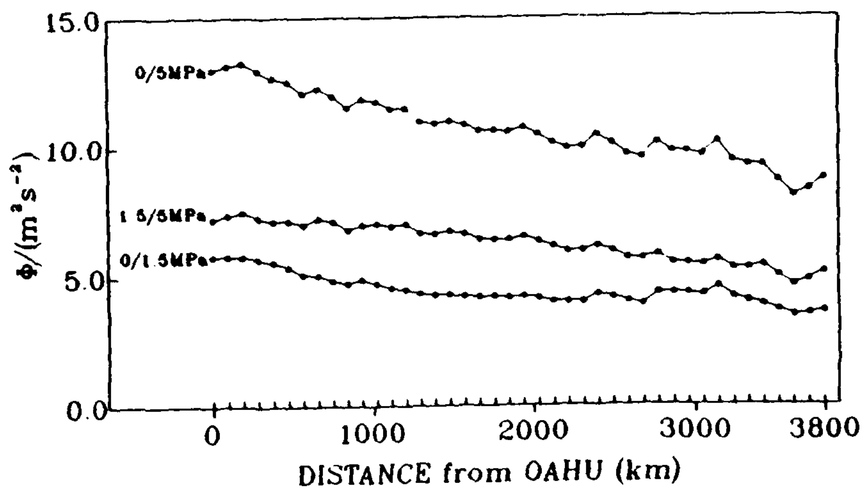
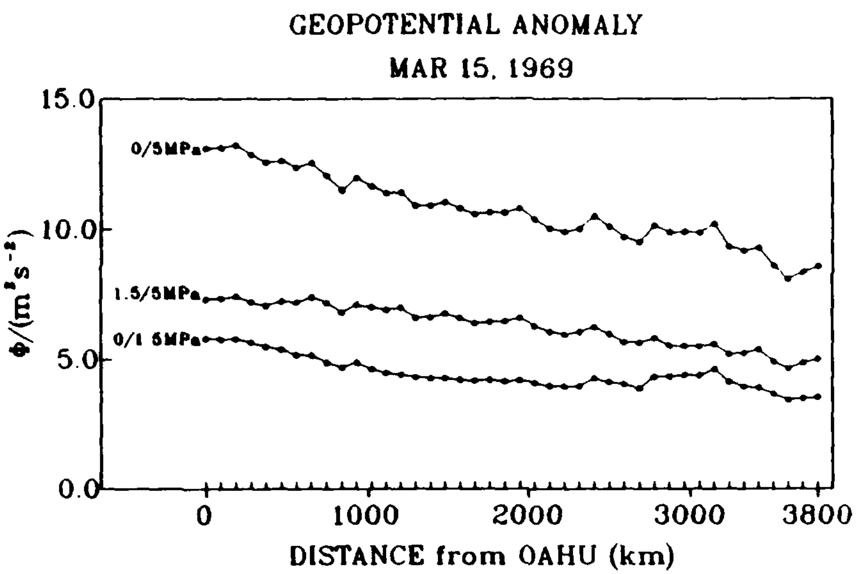


GEOPOTENTIAL ANOMALY
MAR 1, 1969

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MAR 15, 1969
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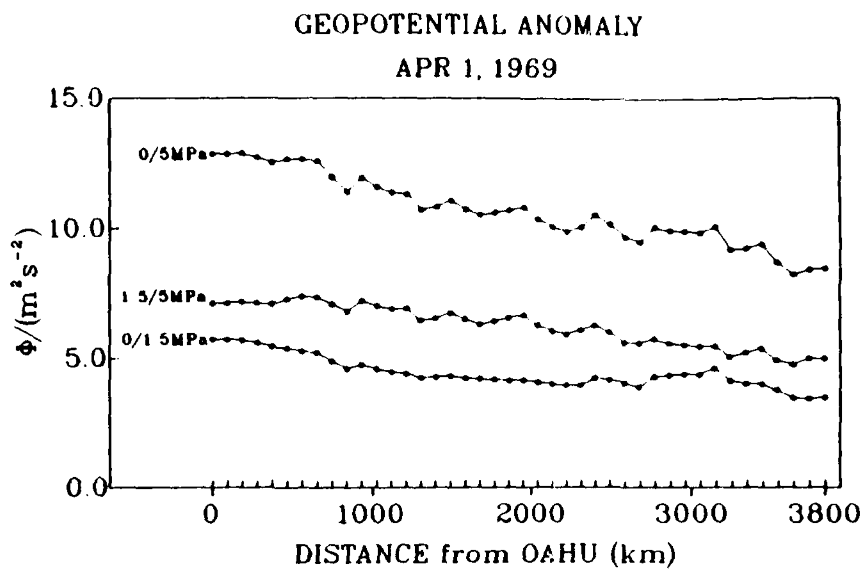
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0/5MPa
1.5/5MPa
0/1.5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
APR 1, 1969
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$\Phi/(m^2s^{-2})$
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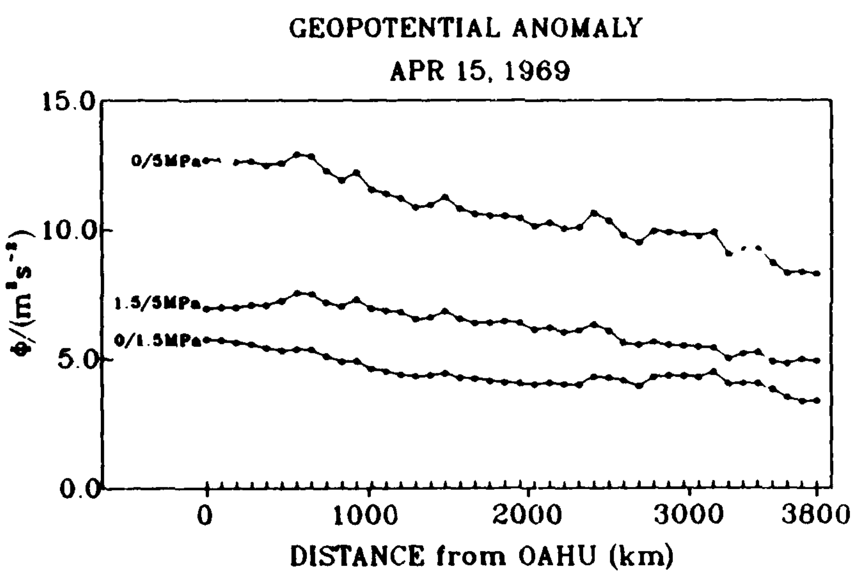
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
APR 15, 1969
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$\Phi/(m^2s^{-2})$
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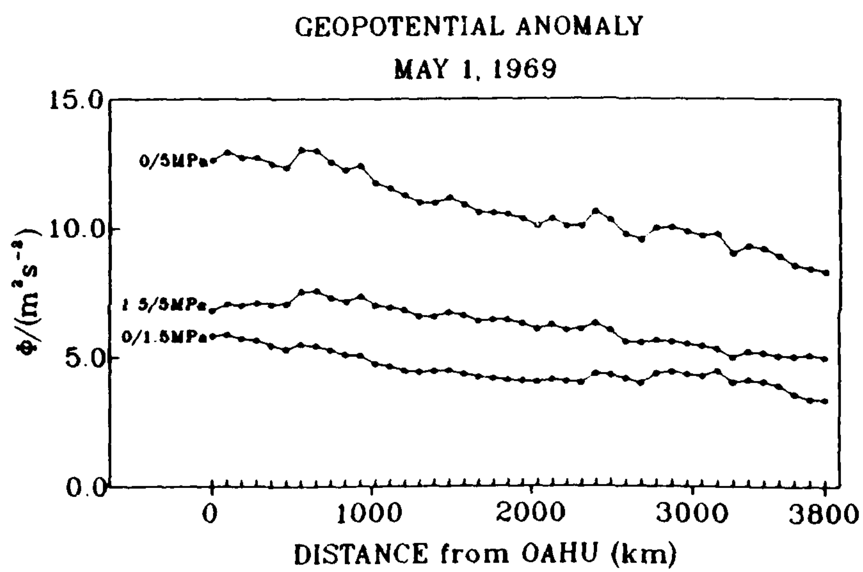
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAY 1, 1969
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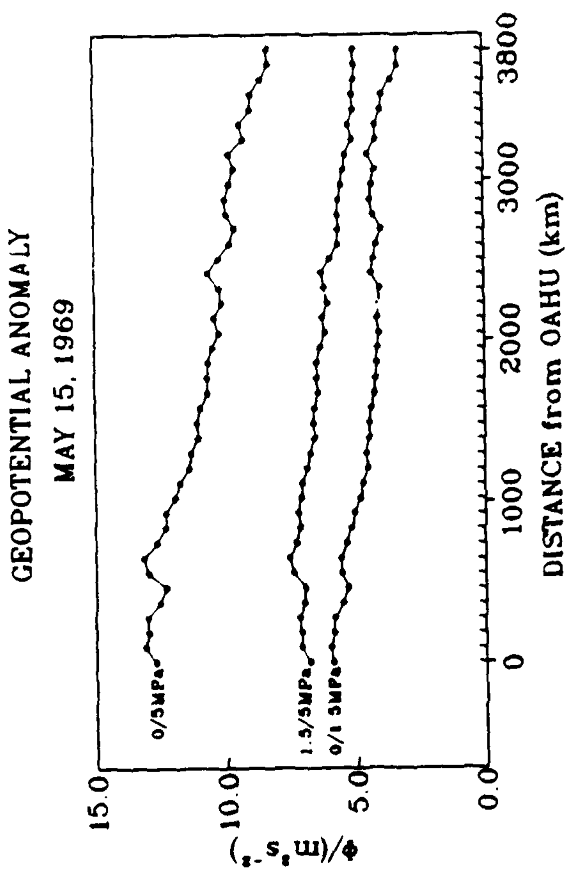
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAY 15, 1969
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0/1.5MPa
Φ/(m²s⁻²)
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1000
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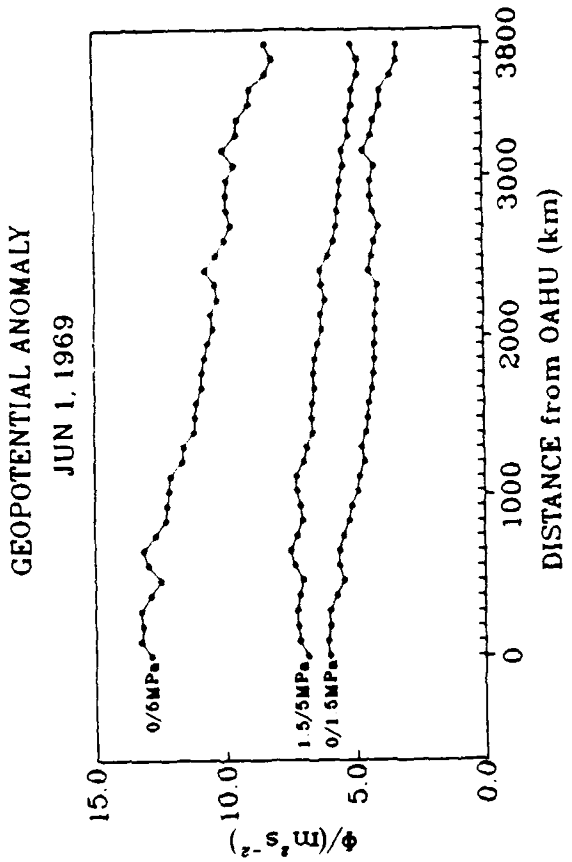
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUN 1, 1969
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0/1.5MPa
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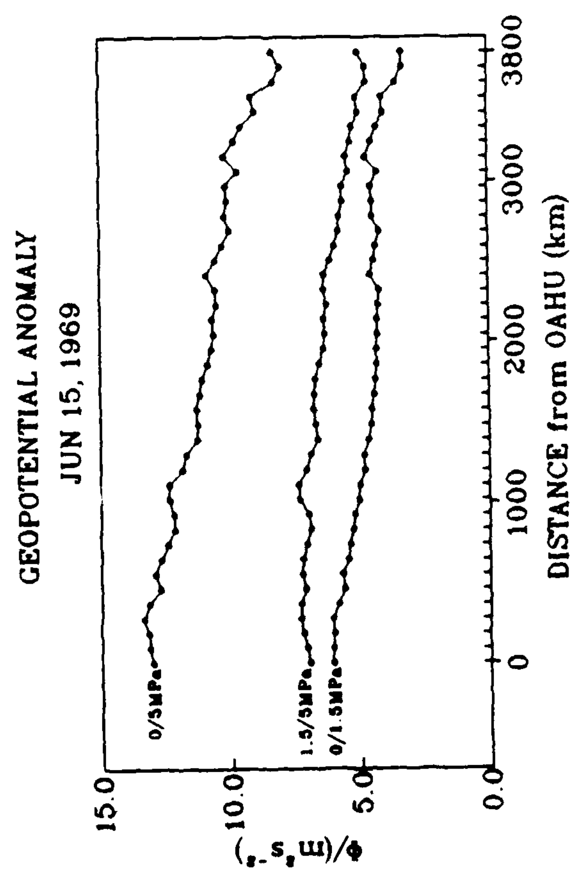
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUN 15, 1969
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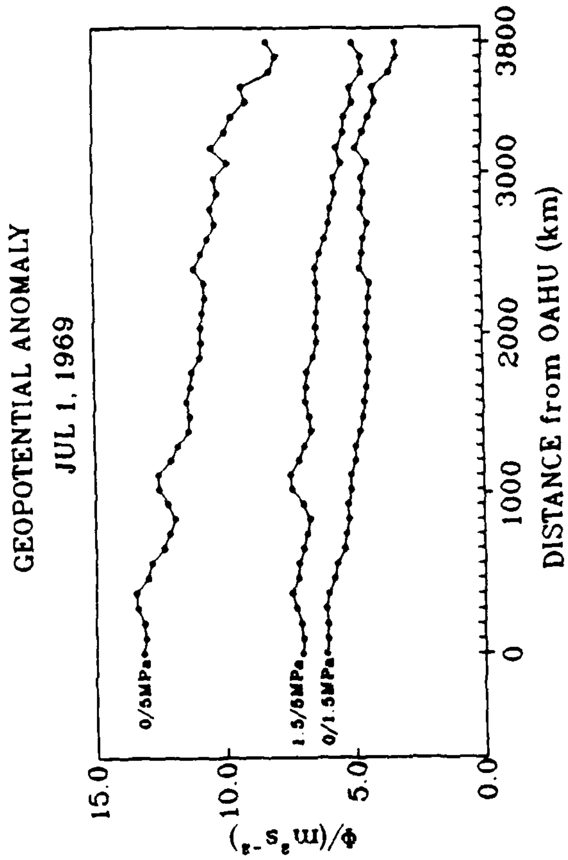
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUL 1, 1969
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1.5/5MPa
0/1.5MPa
Φ/(m²s⁻²)
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2000
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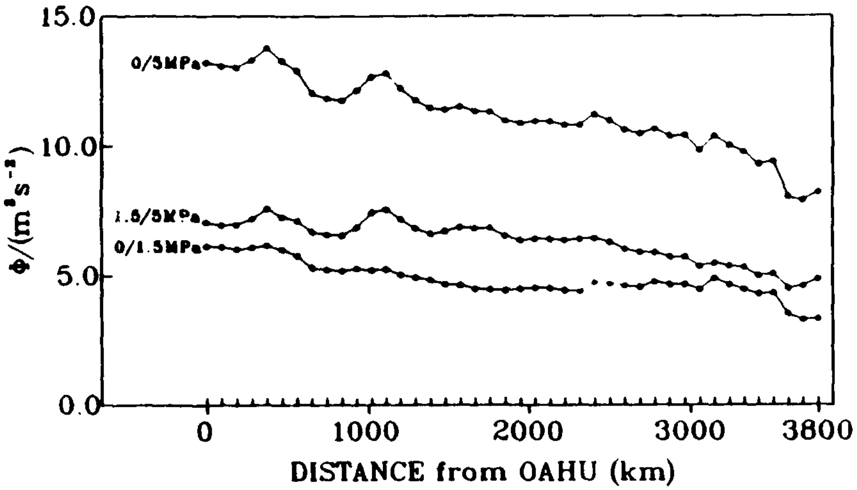
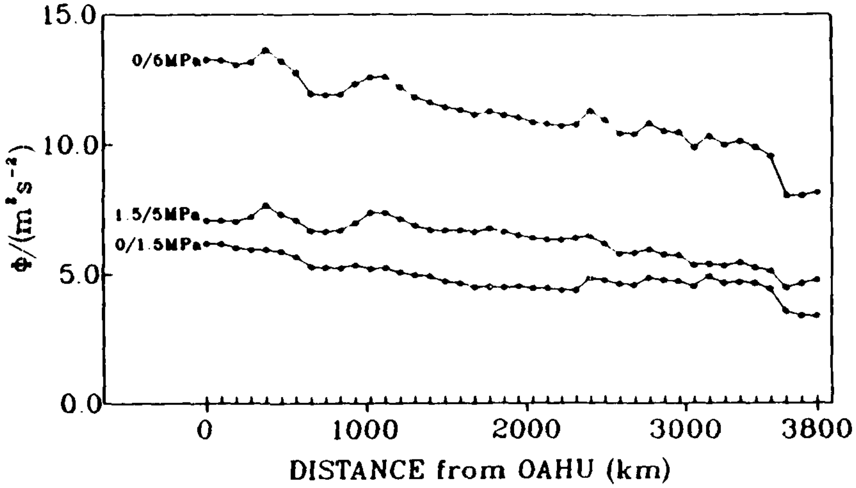
DISTANCE from OAHU (km)

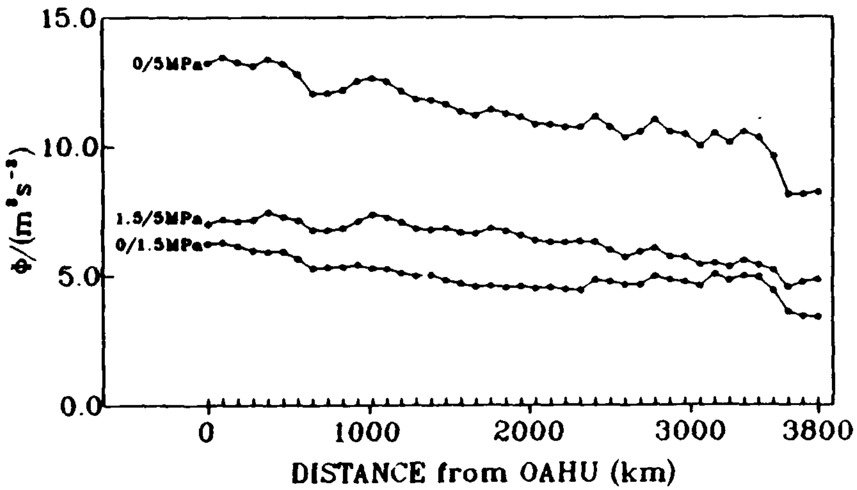
GEOPOTENTIAL ANOMALY
JUL 15, 1969



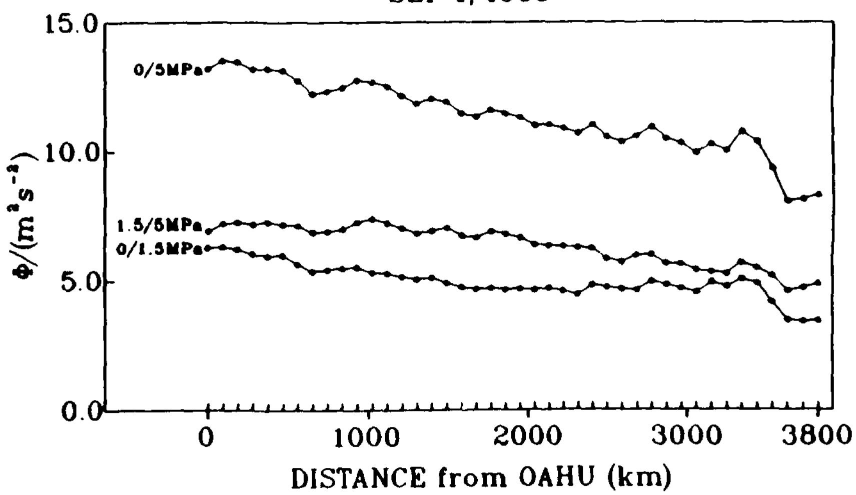
GEOPOTENTIAL ANOMALY
AUG 1, 1969

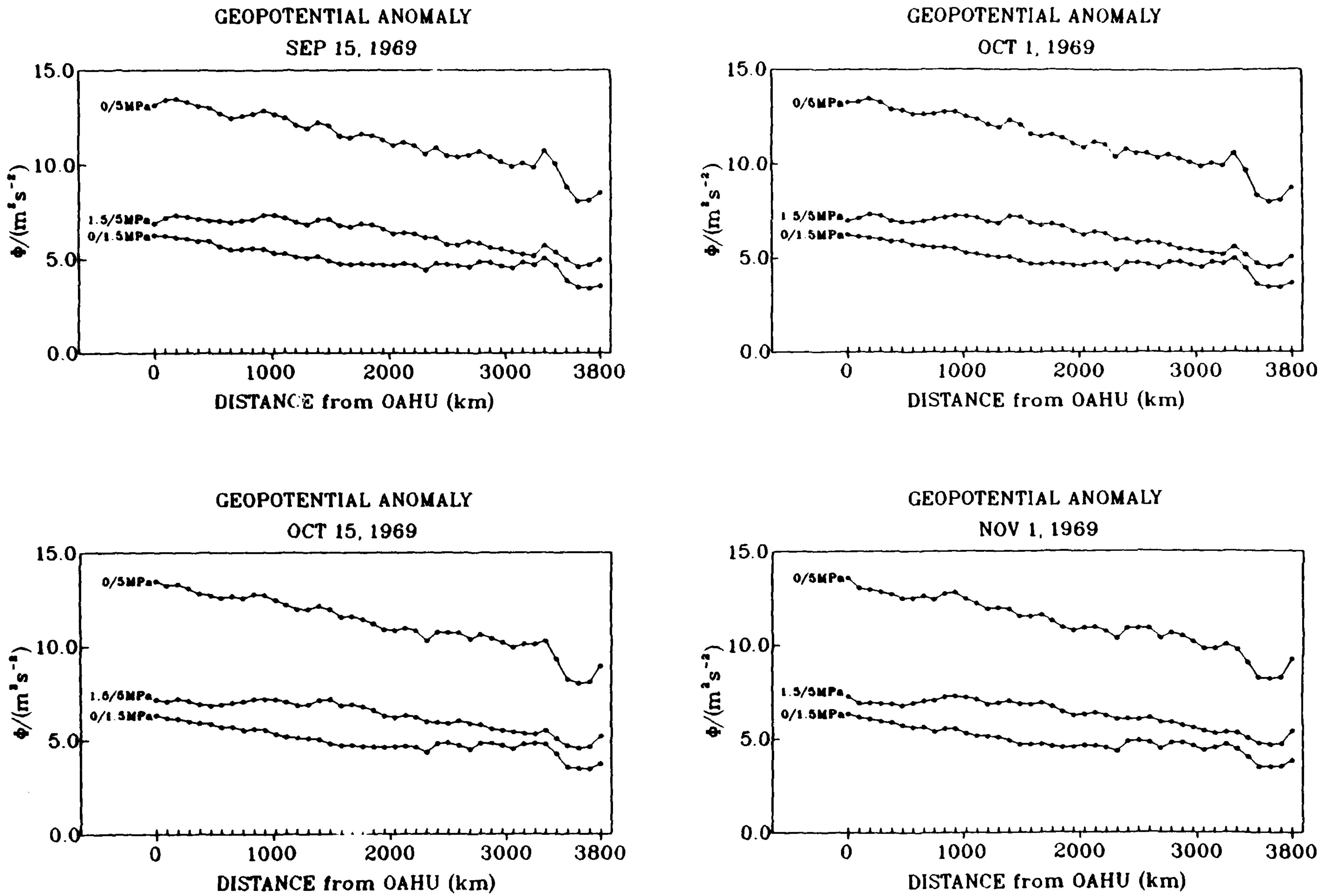


GEOPOTENTIAL ANOMALY
AUG 15, 1969



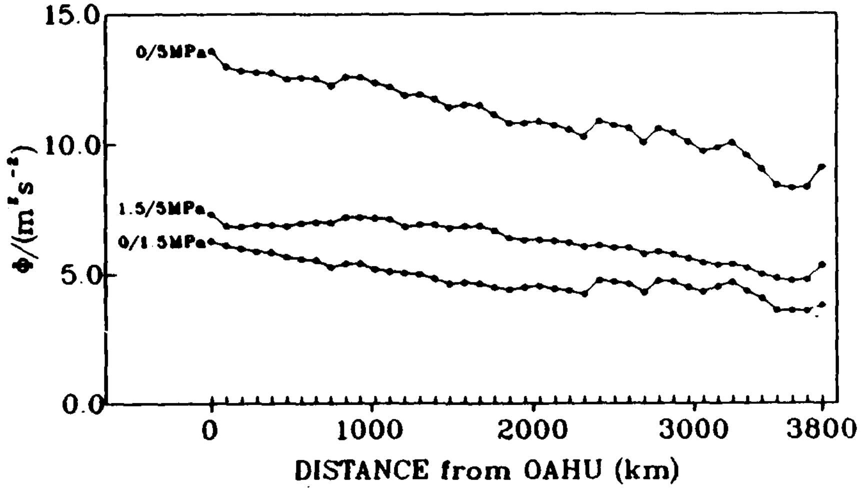
GEOPOTENTIAL ANOMALY
SEP 1, 1969





GEOPOTENTIAL ANOMALY
SEP 15, 1969
OCT 1, 1969
OCT 15, 1969
NOV 1, 1969
$\Phi/(m^2s^{-2})$
0/5MPa
1.5/5MPa
0/1.5MPa
DISTANCE from OAHU (km)
15.0
10.0
5.0
0.0
0
1000
2000
3000
3800

GEOPOTENTIAL ANOMALY
NOV 15, 1969



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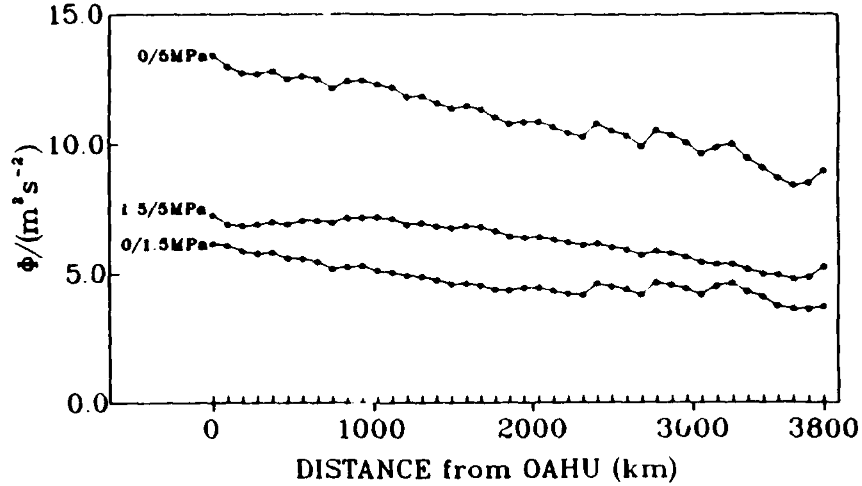
DEC 1, 1969



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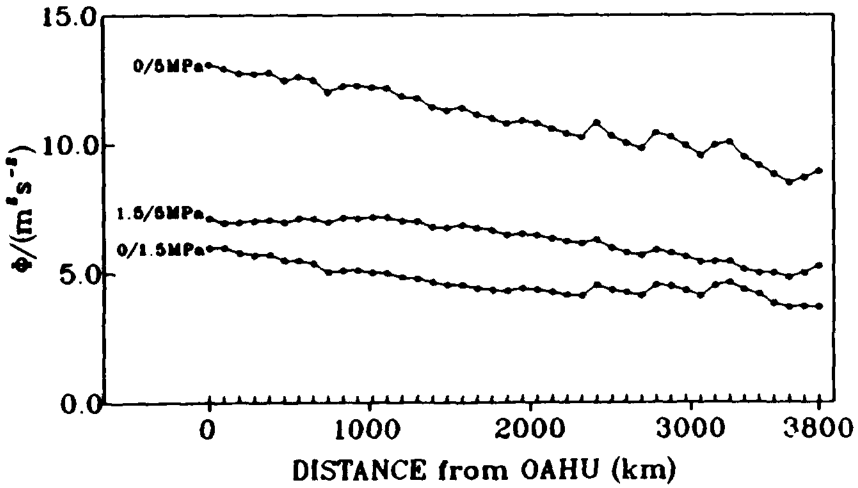
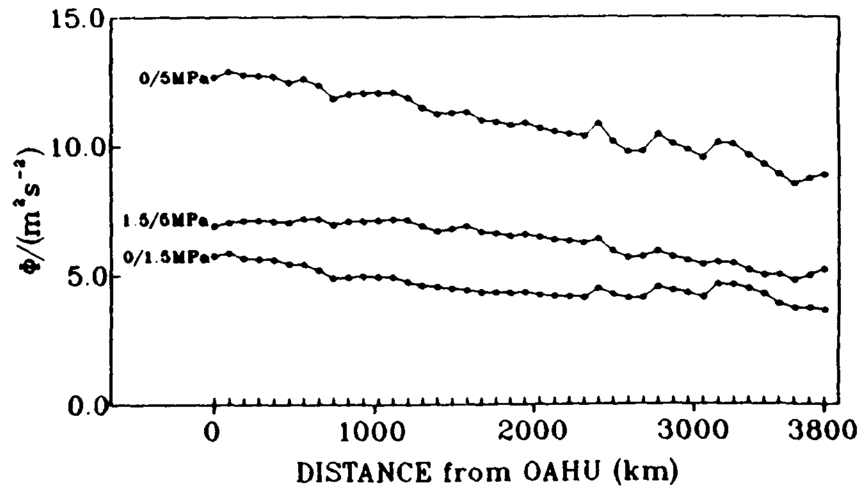
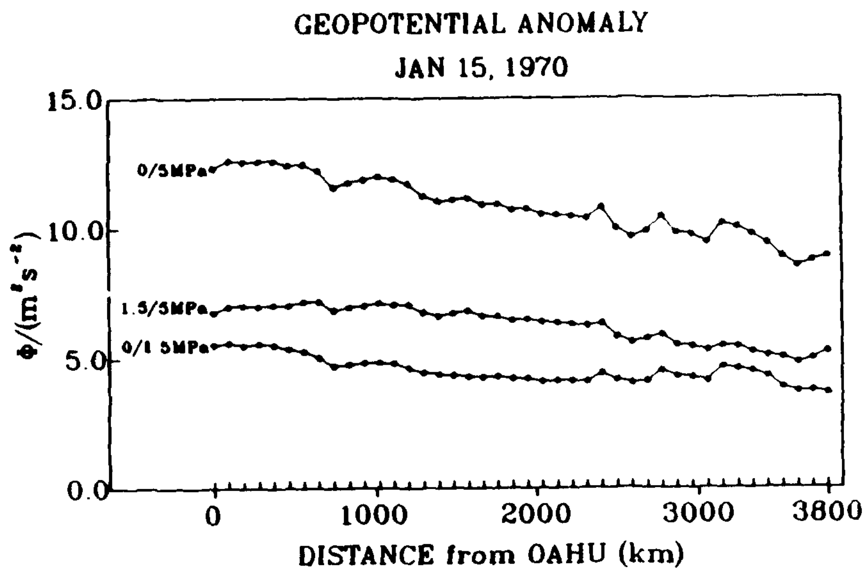
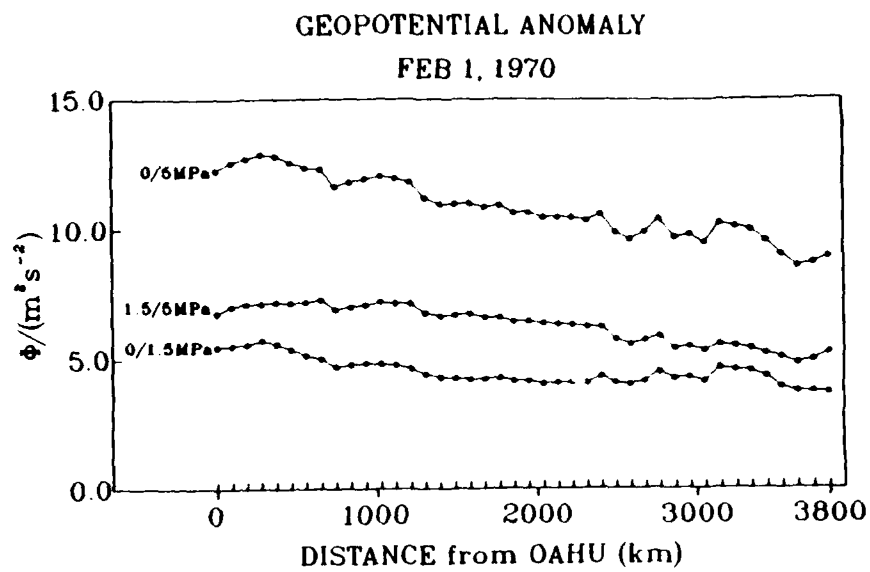
DEC 15, 1969



GEOPOTENTIAL ANOMALY
JAN 1, 1970




GEOPOTENTIAL ANOMALY
JAN 15, 1970
0/5MPa
1.5/5MPa
0/1.5MPa
15.0
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 1, 1970
0/5MPa
1.5/5MPa
0/1.5MPa
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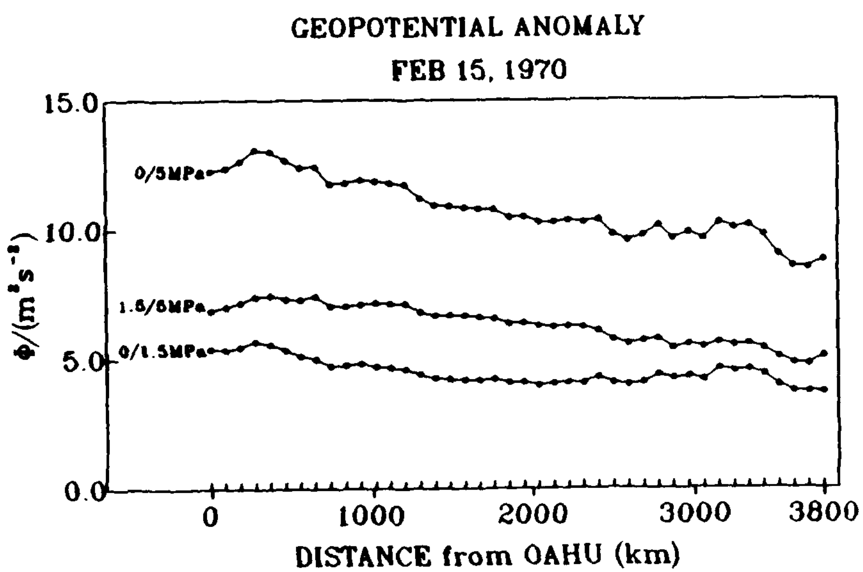
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 15, 1970
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0/1.5MPa
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0
1000
2000
3000
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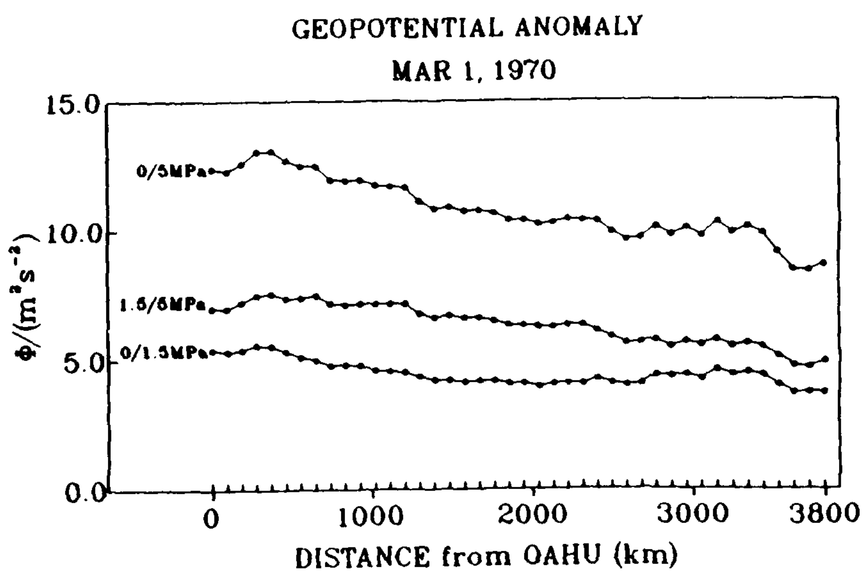
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAR 1, 1970
0/5MPa
1.5/5MPa
0/1.5MPa
15.0
10.0
5.0
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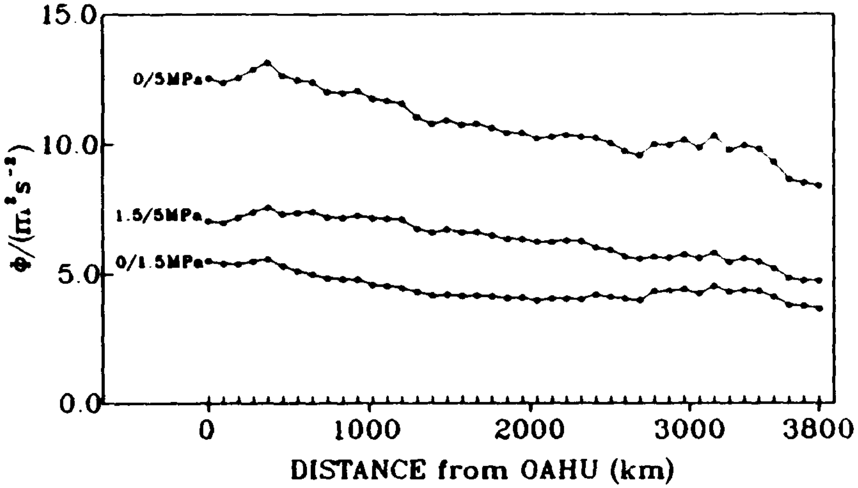
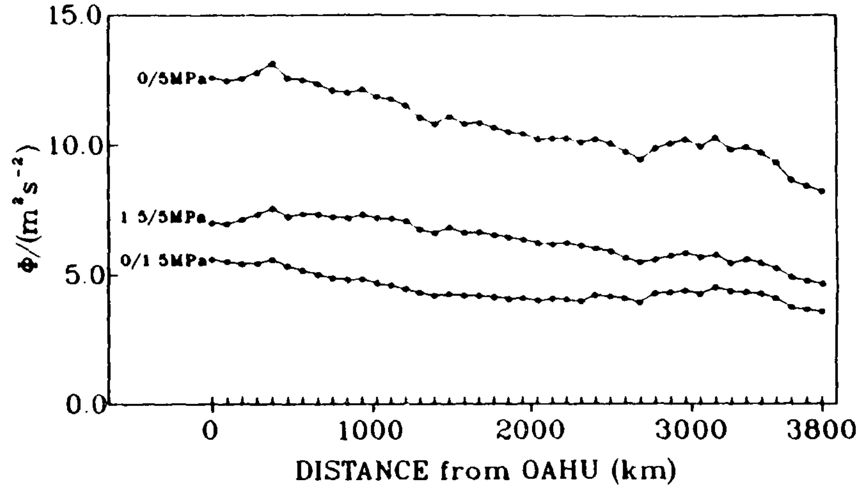
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
MAR 15, 1970



GEOPOTENTIAL ANOMALY
APR 1, 1970



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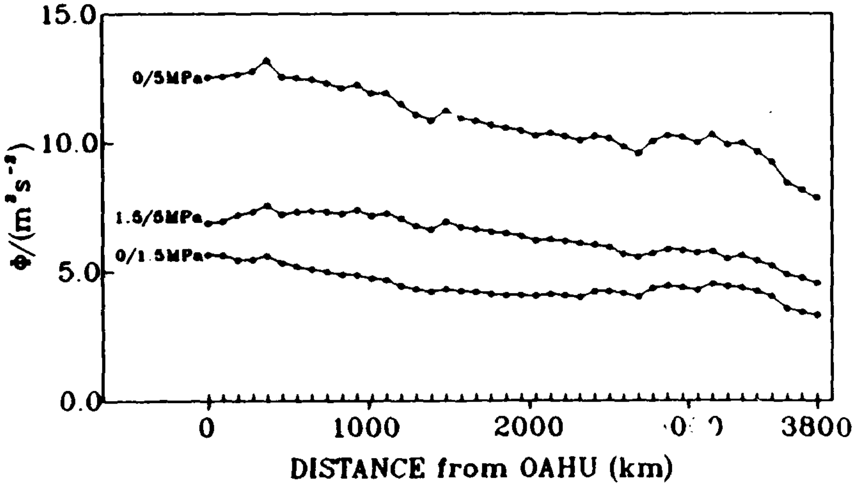
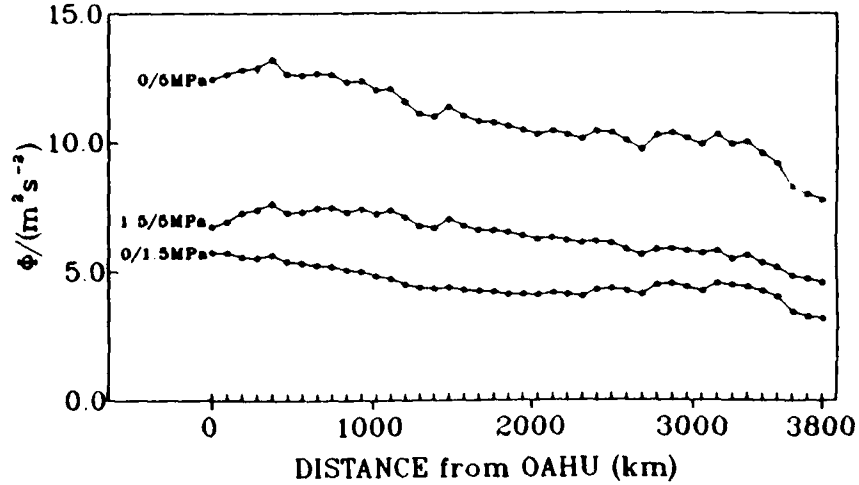
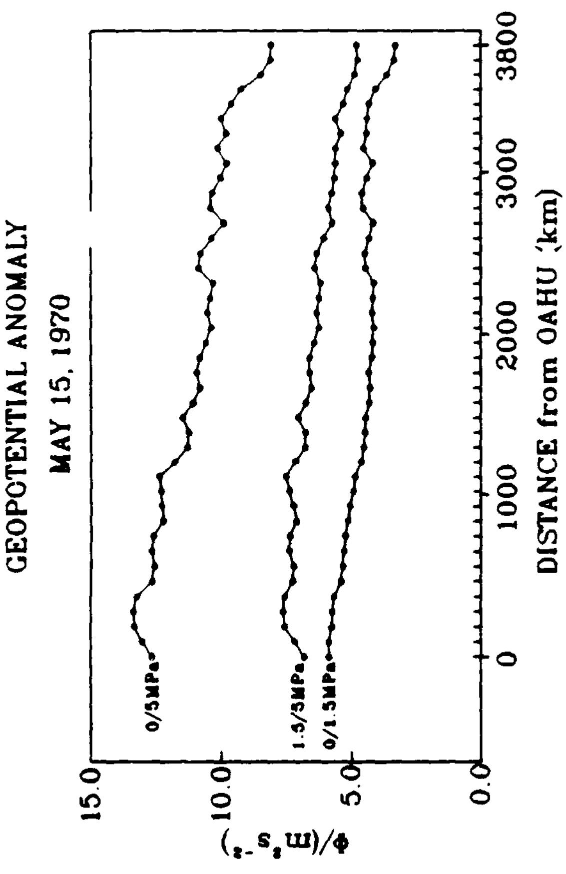
APR 15, 1970



GEOPOTENTIAL ANOMALY
MAY 1, 1970

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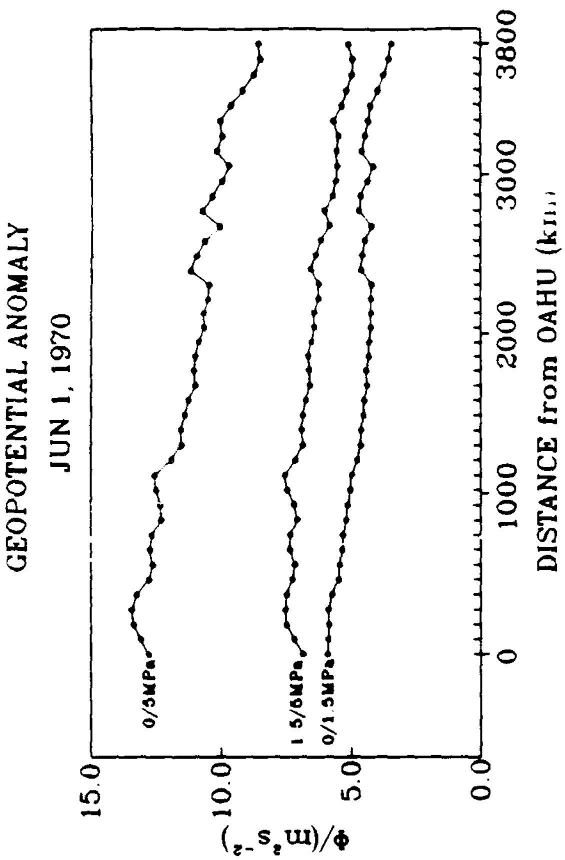
1.5/5MPa
0/1.5MPa
15.0
10.0
5.0
0.0
Φ/(m² s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUN 1, 1970
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0/1.5MPa
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Φ/(m² s⁻²)
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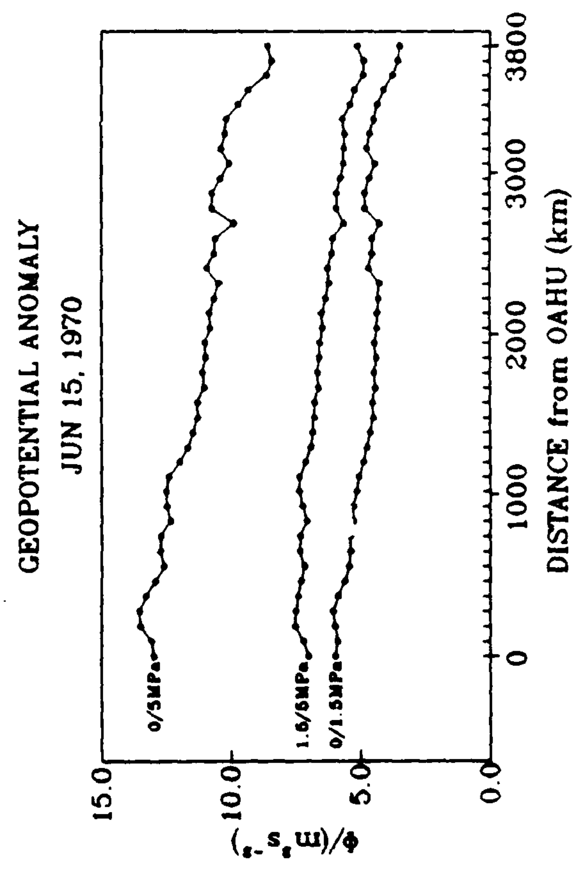
1000
2000
3000
3800
DISTANCE from OAHU (km)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1.5/5MPa
0/1.5MPa
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Φ/(m² s⁻²)
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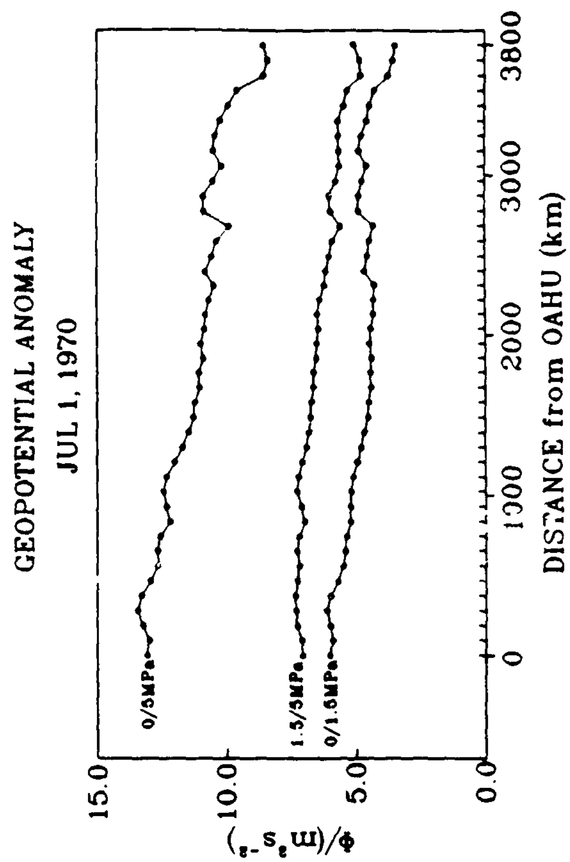
1000
2000
3000
3800
DISTANCE from OAHU (km)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0/1.5MPa
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0.0
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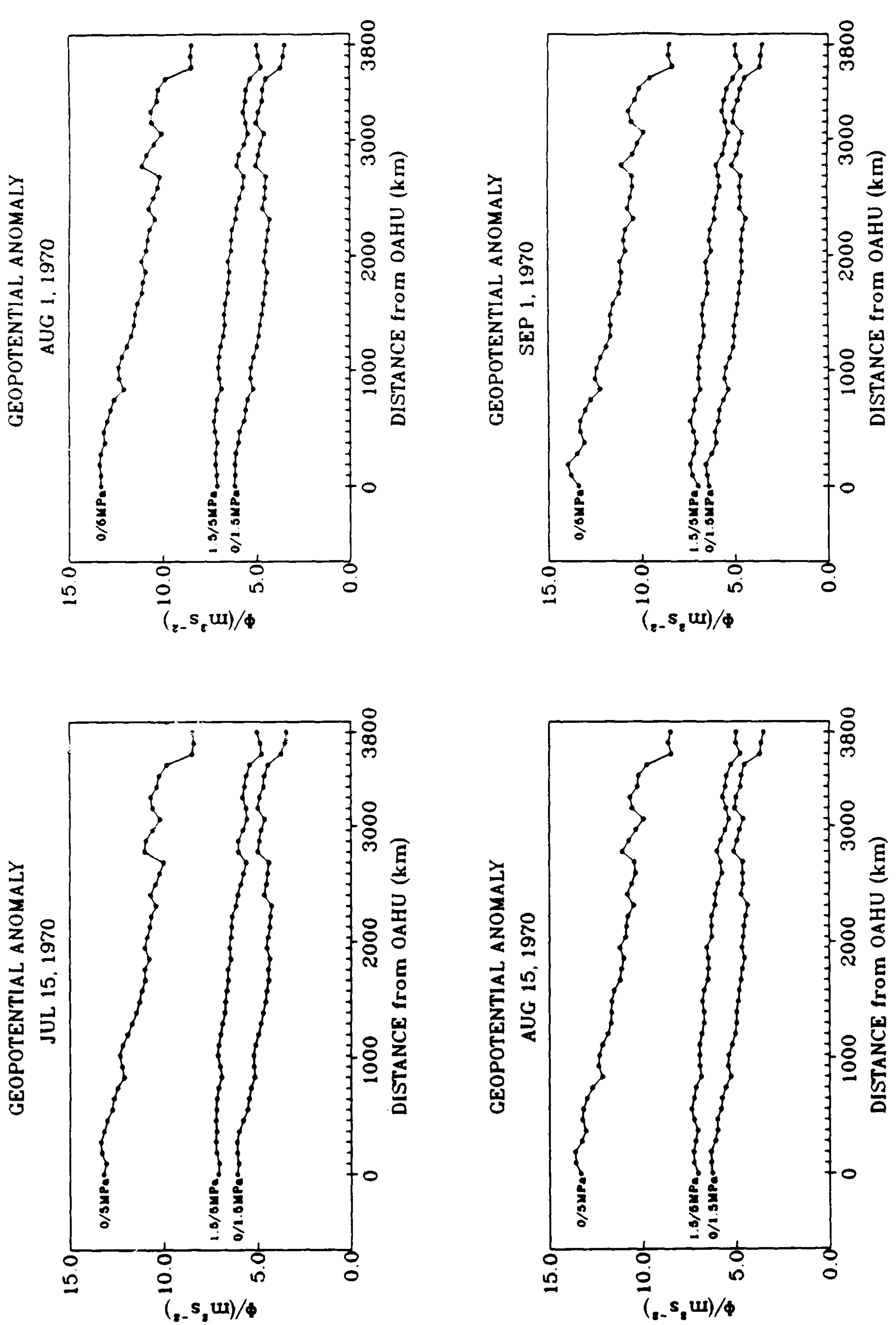
1000
2000
3000
3800
DISTANCE from OAHU (km)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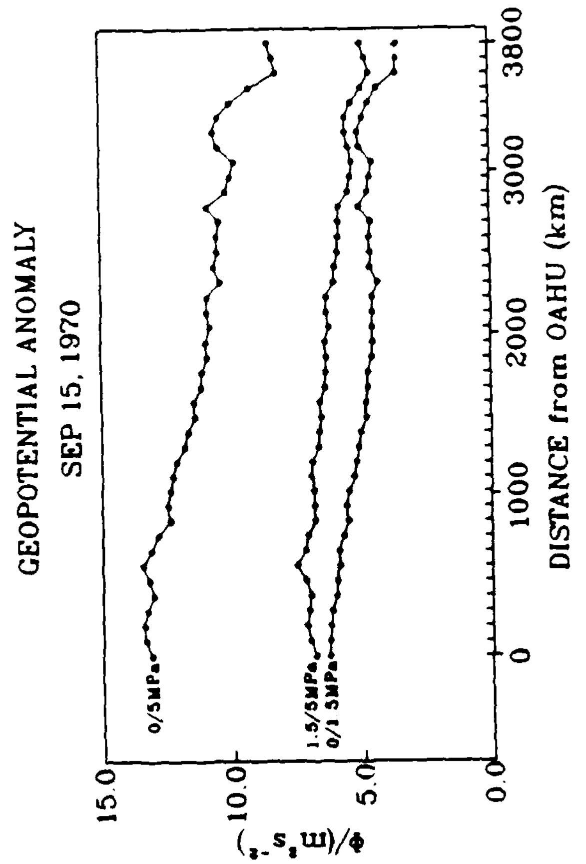
JUL 15, 1970
GEOPOTENTIAL ANOMALY
AUG 1, 1970
GEOPOTENTIAL ANOMALY
AUG 15, 1970
GEOPOTENTIAL ANOMALY
SEP 1, 1970
0/5MPa
1.5/5MPa
0/1.5MPa
DISTANCE from OAHU (km)
0
1000
2000
3000
3800
0.0
5.0
10.0
15.0
$\Phi/(m^2 s^{-2})$


GEOPOTENTIAL ANOMALY
SEP 15, 1970
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1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
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10.0
5.0
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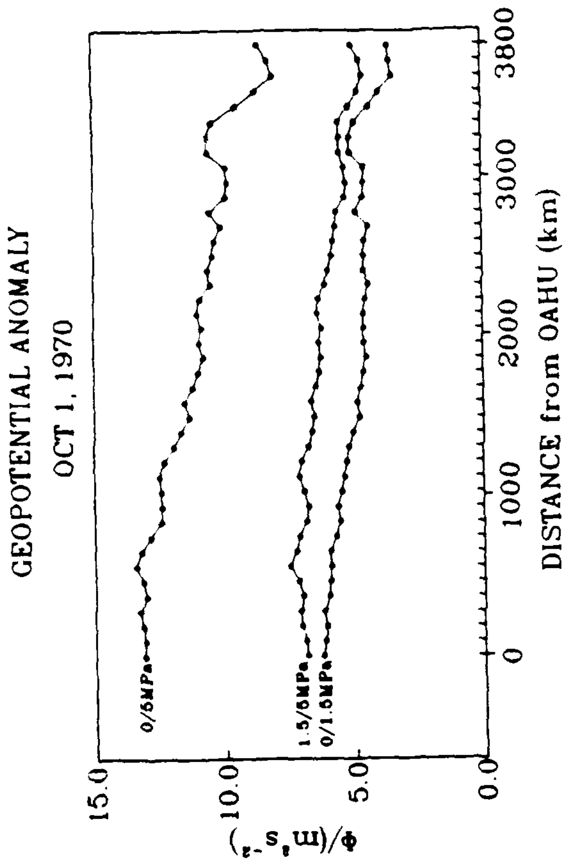
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 1, 1970
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1.5/5MPa
0/1.5MPa
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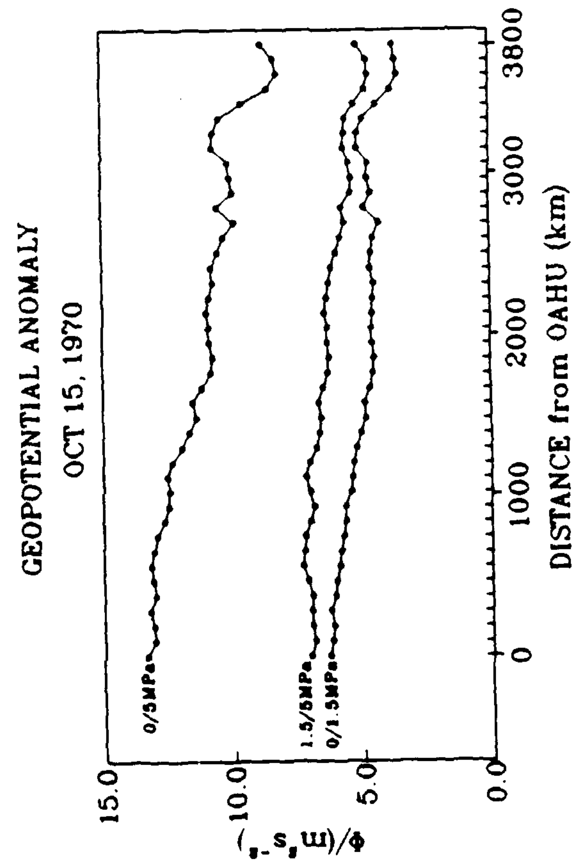
DISTANCE from OAHU (km)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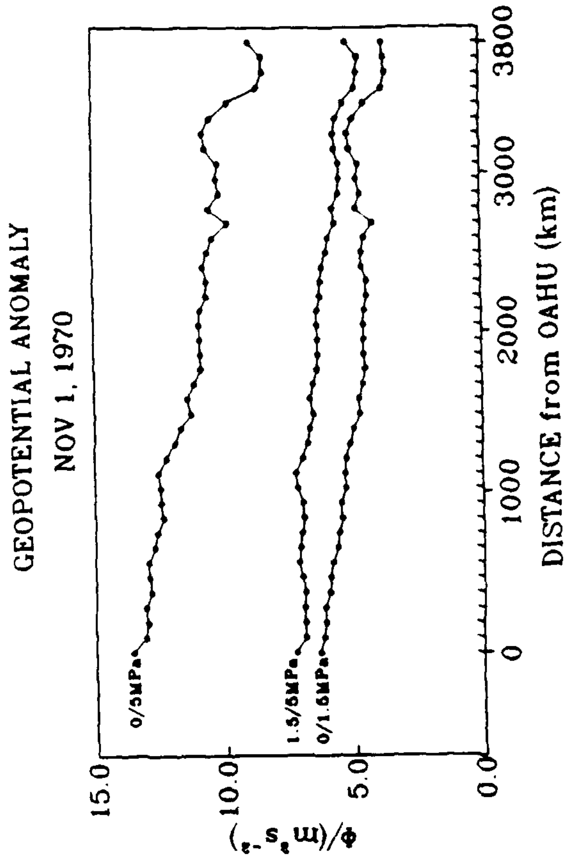
DISTANCE from OAHU (km)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0/1.5MPa
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1000
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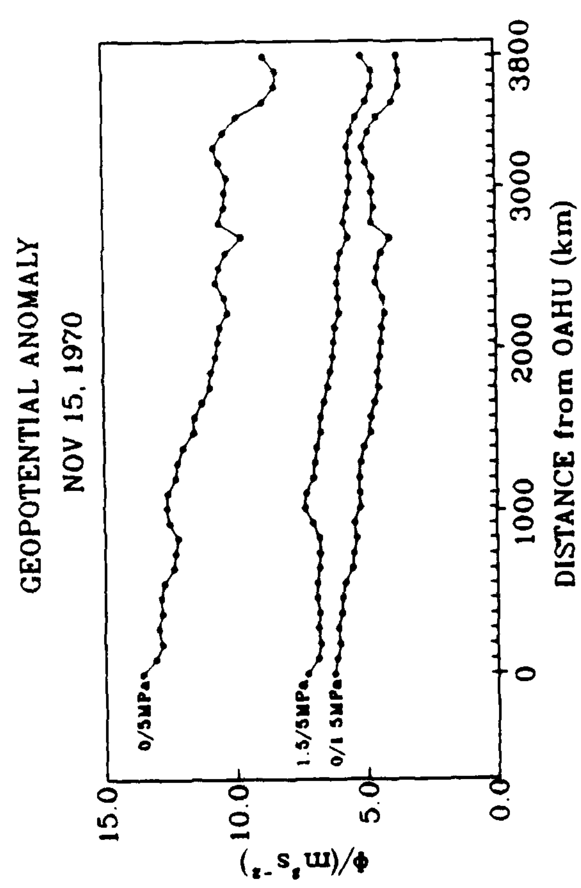
3800
DISTANCE from OAHU (km)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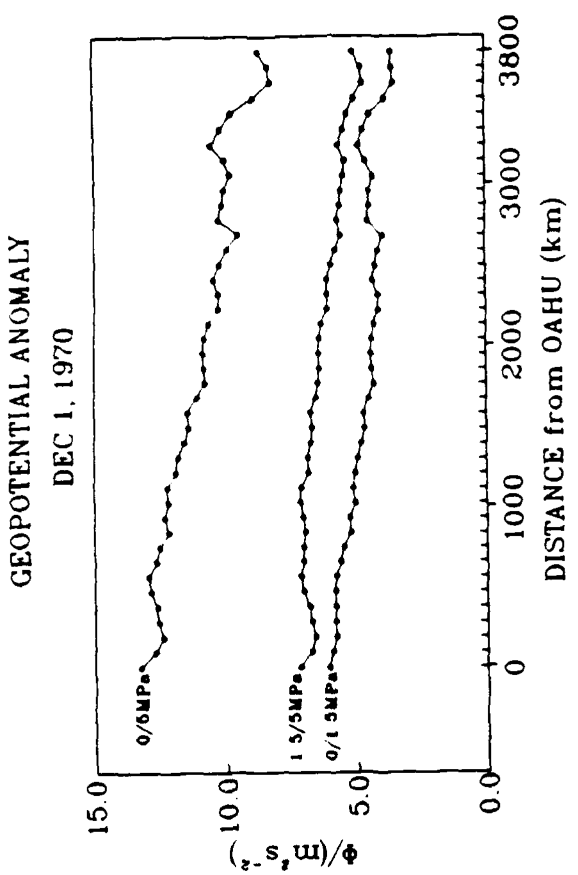
DISTANCE from OAHU (km)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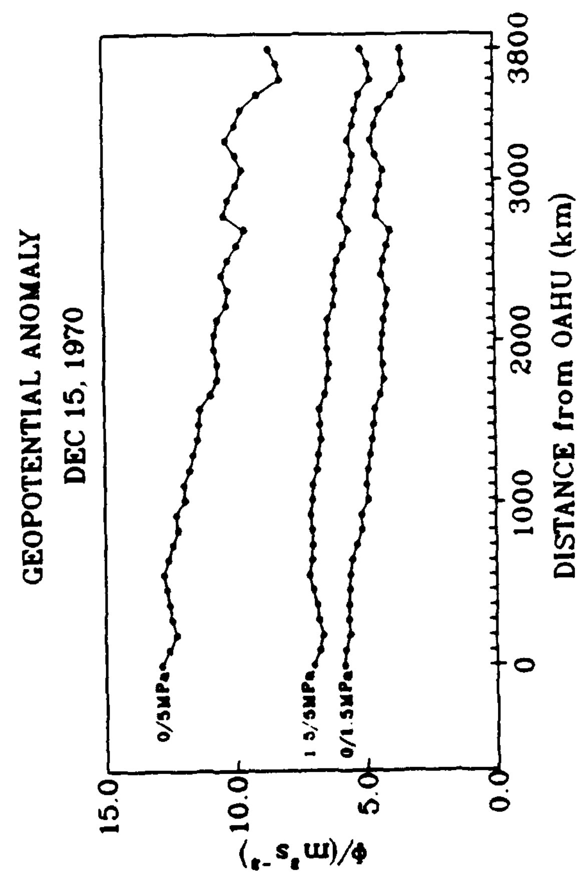
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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φ/(m²s⁻²)
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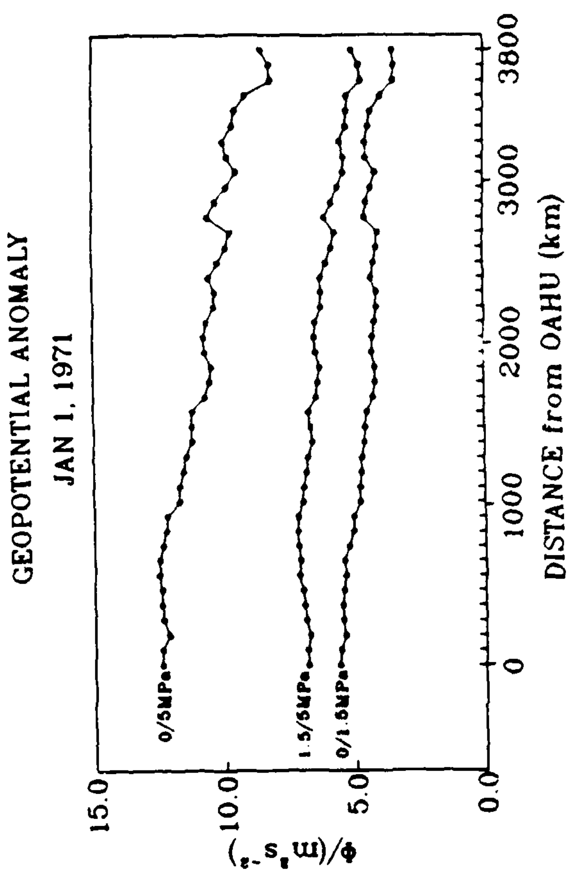
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JAN 1, 1971
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0/1.5MPa
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10.0
5.0
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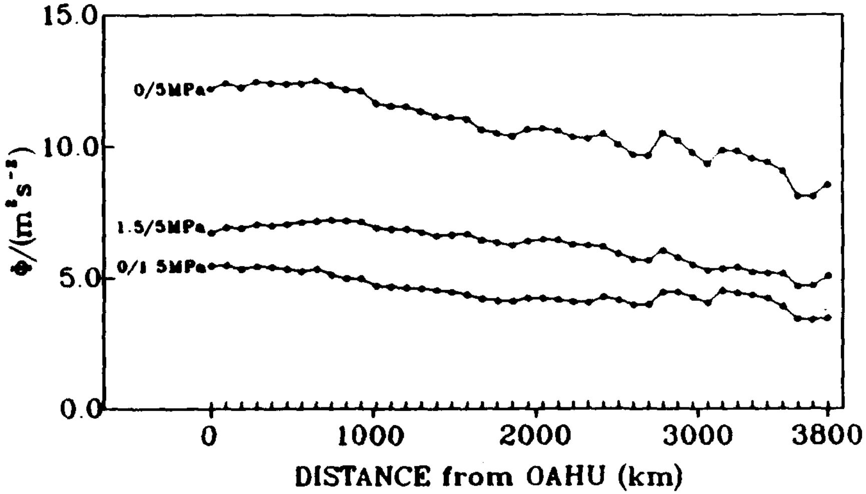
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

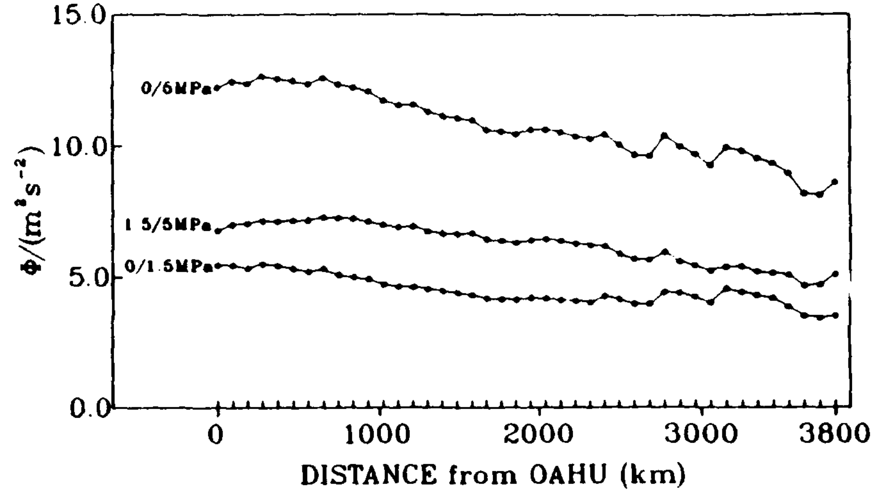
GEOPOTENTIAL ANOMALY

JAN 15, 1971



GEOPOTENTIAL ANOMALY

FEB 1, 1971



GEOPOTENTIAL ANOMALY

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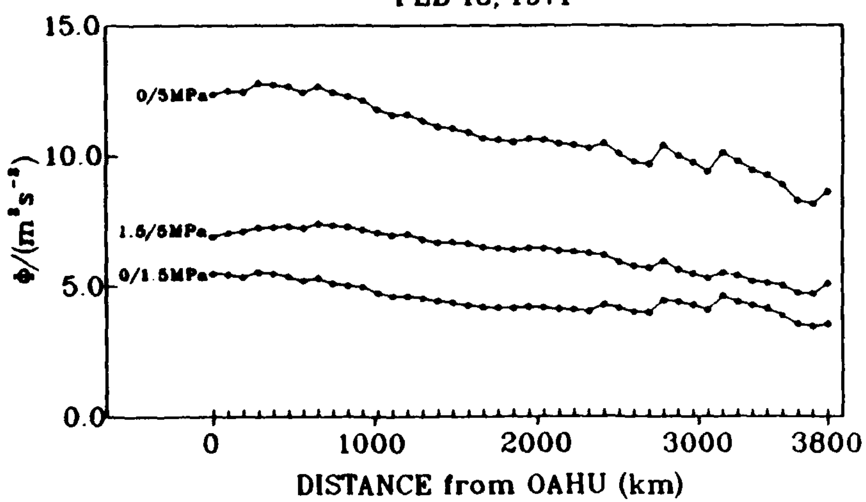
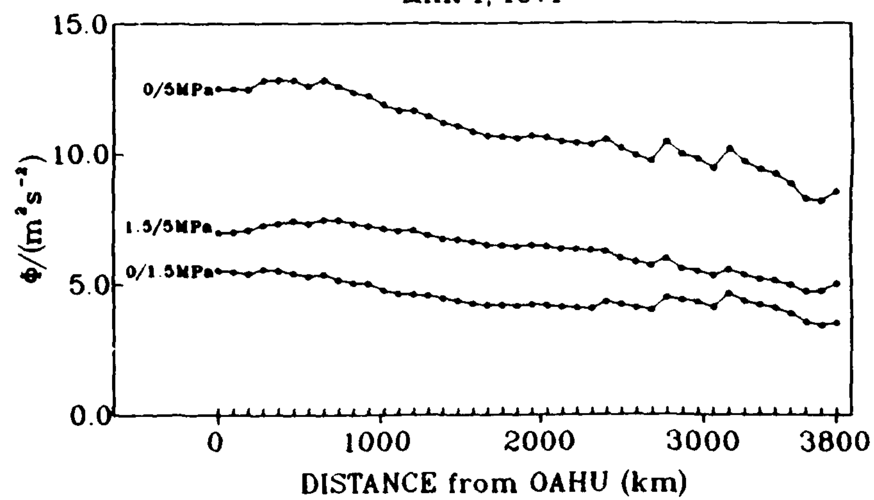
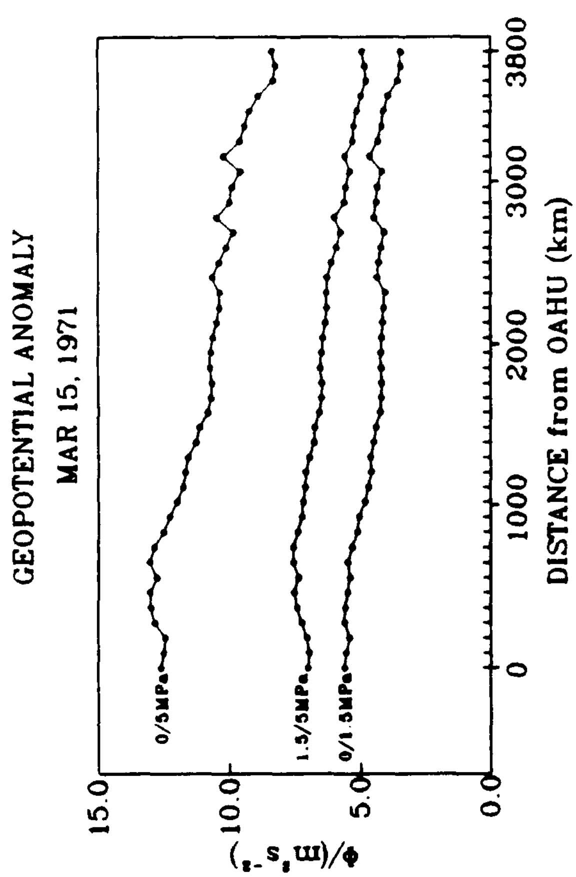


GEOPOTENTIAL ANOMALY

MAR 1, 1971




GEOPOTENTIAL ANOMALY
MAR 15, 1971
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1.5/5MPa
0/1.5MPa
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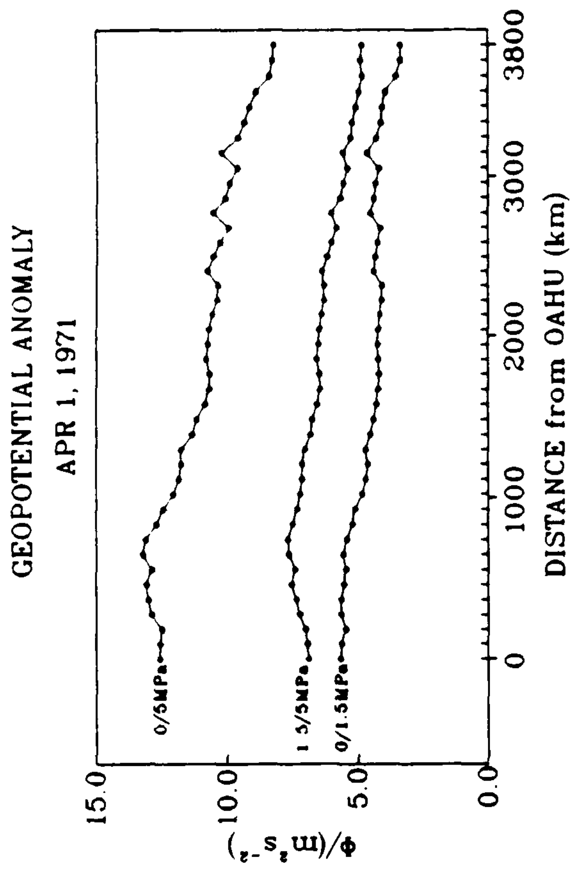
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)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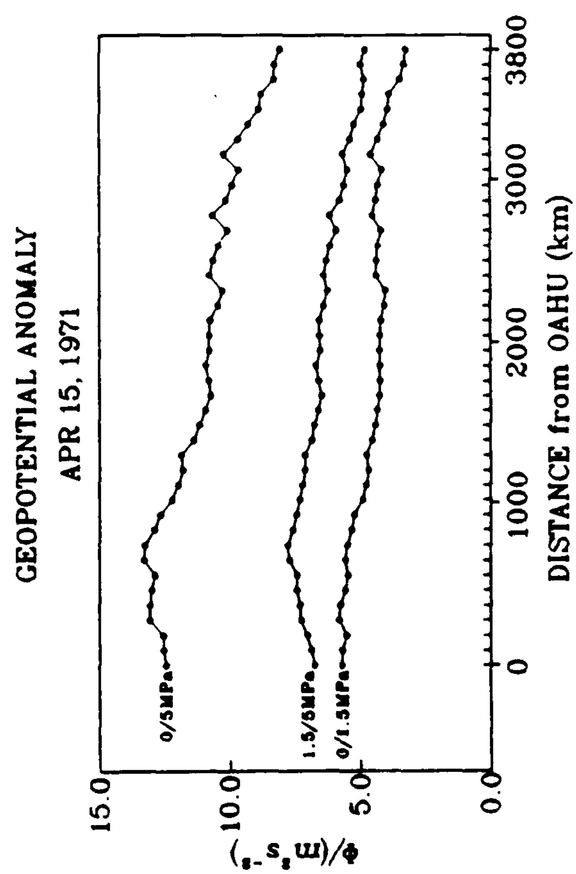
DISTANCE from OAHU (km)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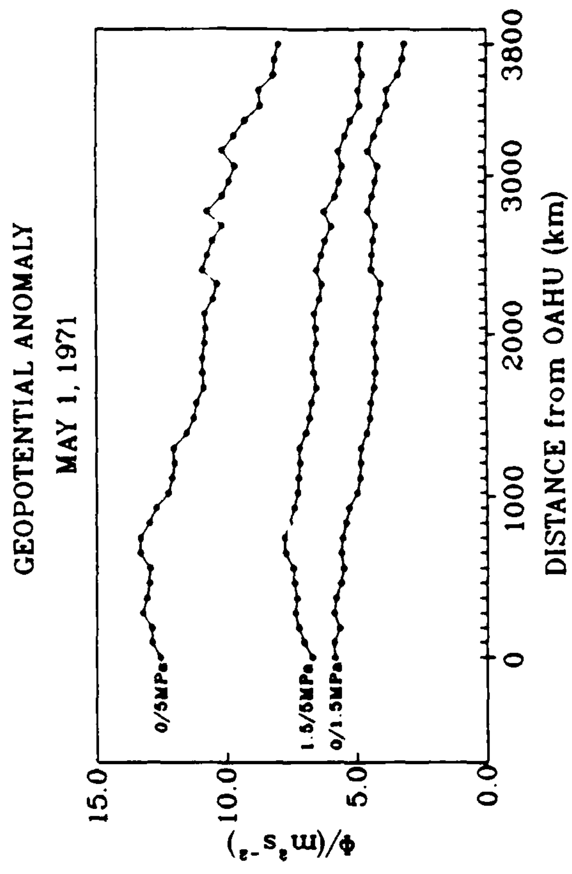
DISTANCE from OAHU (km)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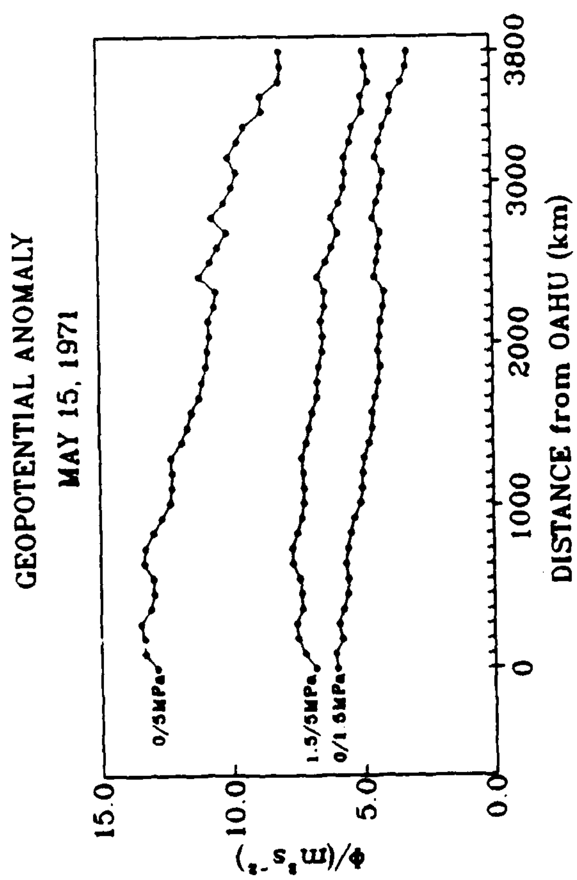
DISTANCE from OAHU (km)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$\phi/(m^2 s^{-2})$
0
1000
2000
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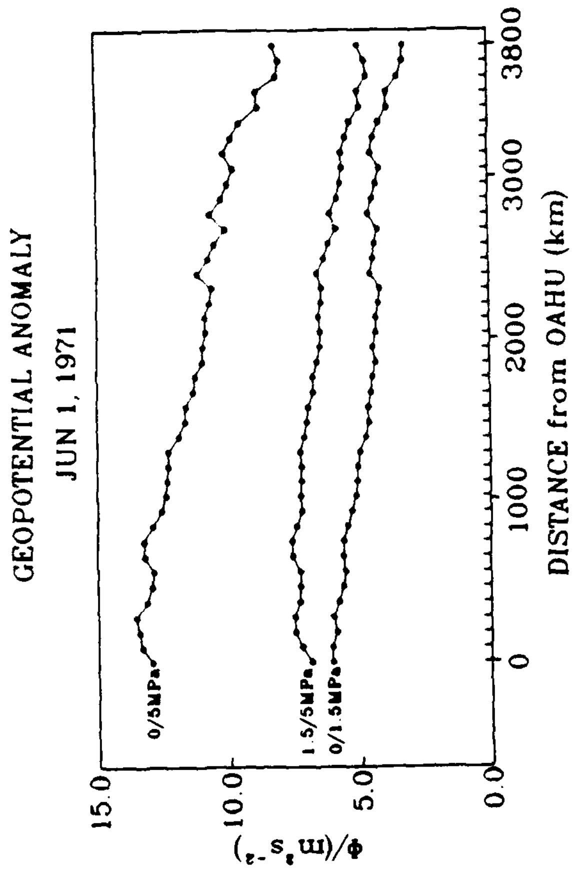
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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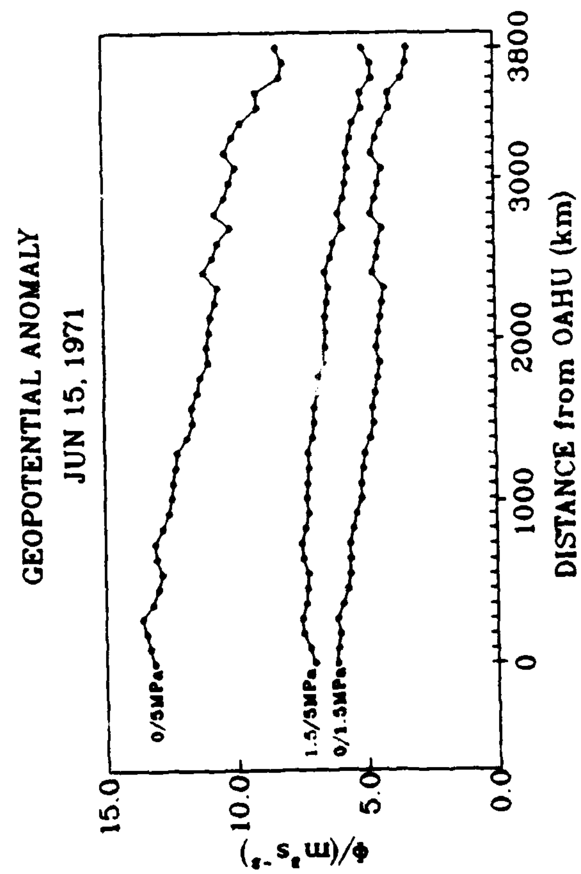
DISTANCE from OAHU (km)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JUN 15, 1971
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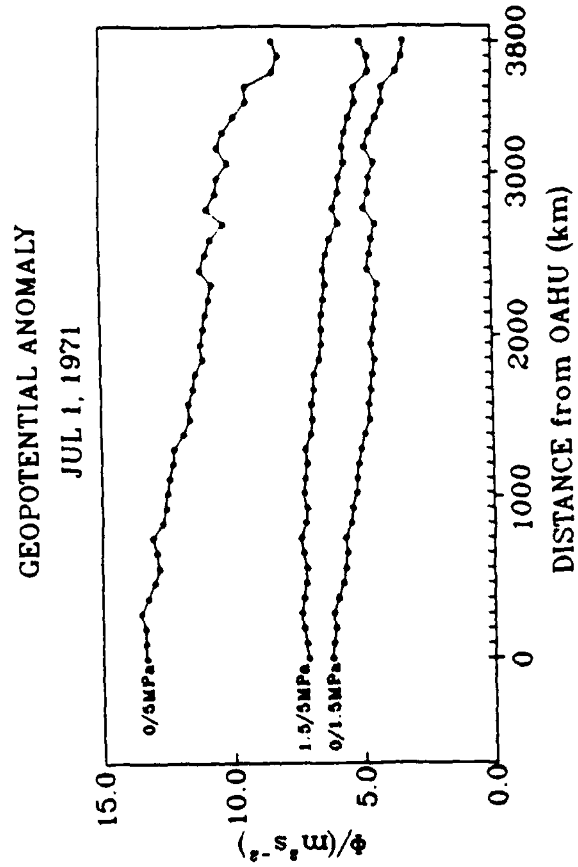
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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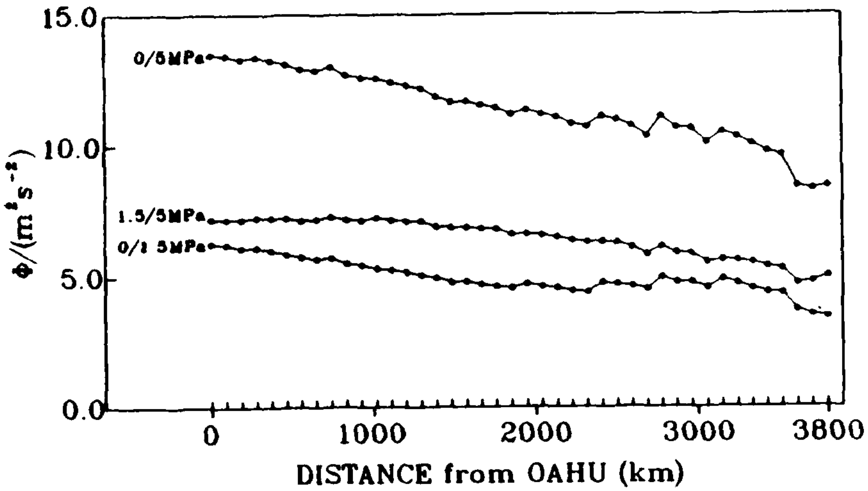
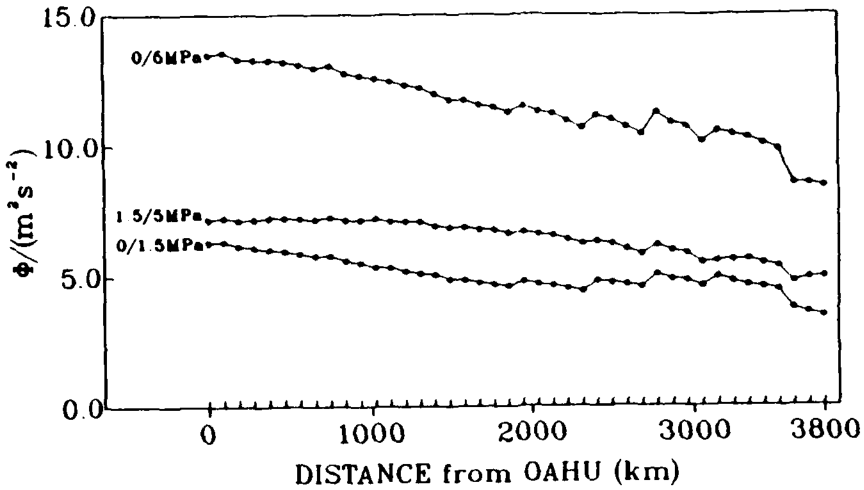
3800
DISTANCE from OAHU (km)

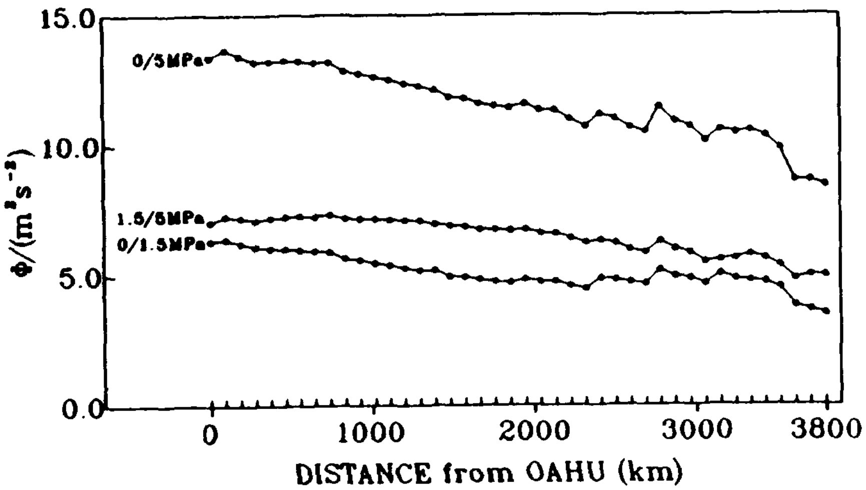
GEOPOTENTIAL ANOMALY
JUL 15, 1971



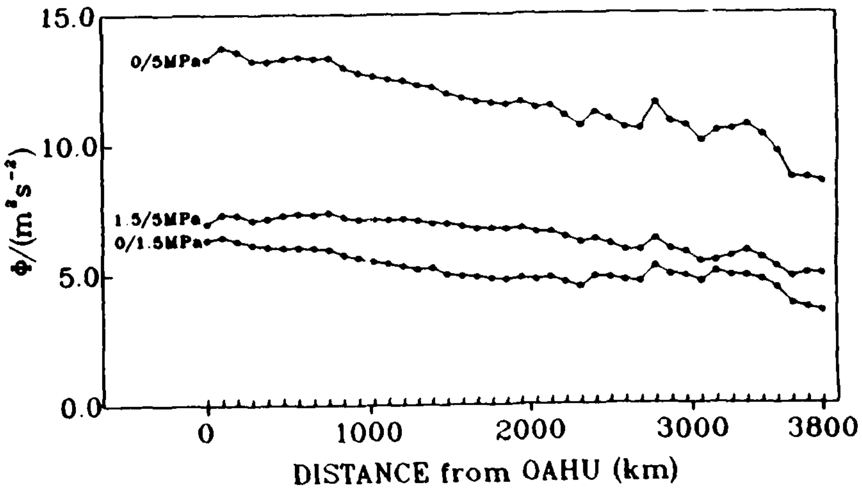
GEOPOTENTIAL ANOMALY
AUG 1, 1971

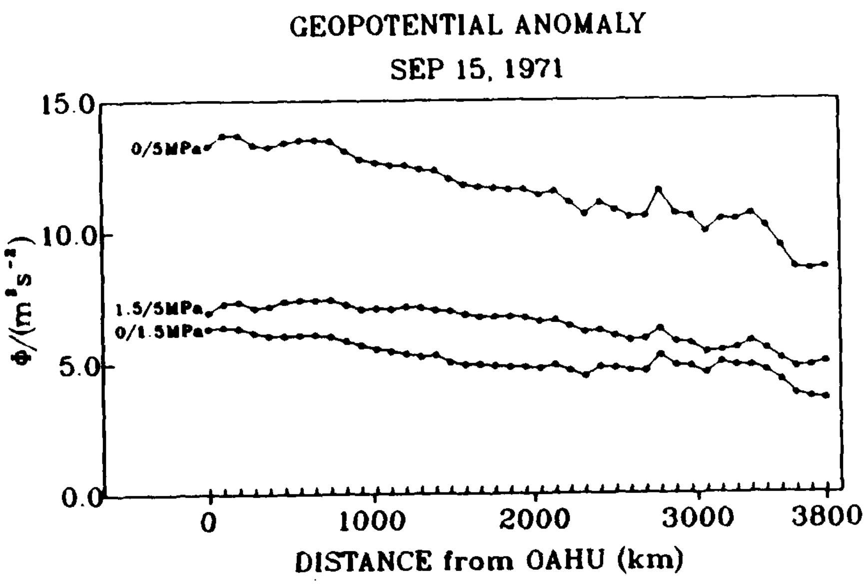


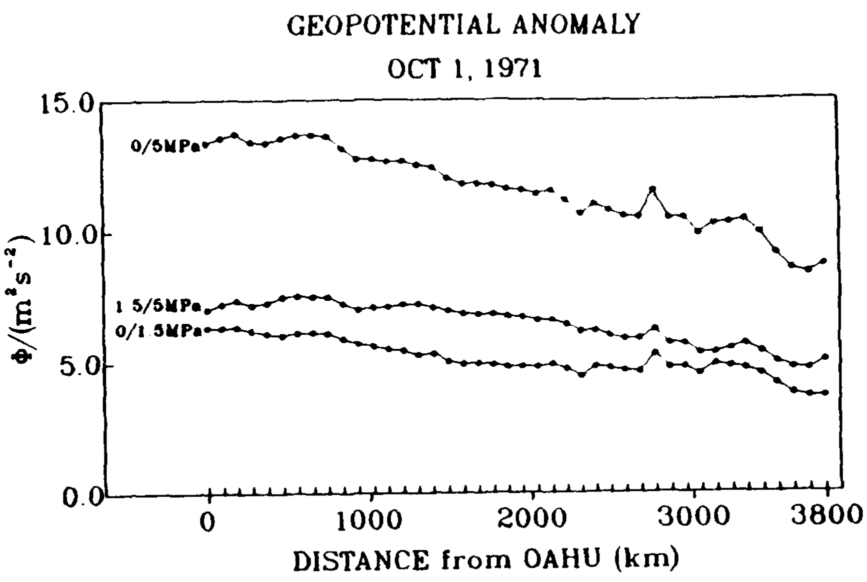
GEOPOTENTIAL ANOMALY
AUG 15, 1971



GEOPOTENTIAL ANOMALY
SEP 1, 1971




GEOPOTENTIAL ANOMALY
SEP 15, 1971
15.0
10.0
5.0
0.0
Φ/(m²s⁻²)
0/5MPa
1.5/5MPa
0/1.5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 1, 1971
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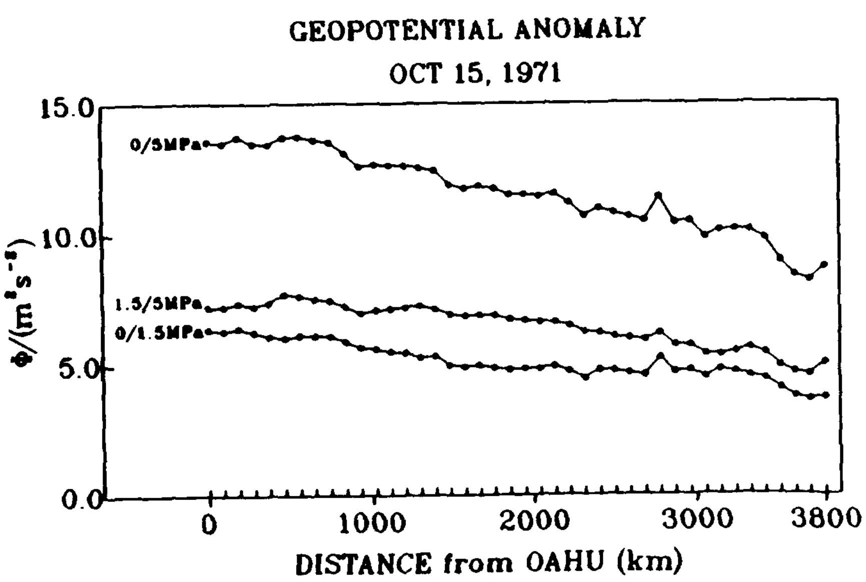
10.0
5.0
0.0
Φ/(m²s⁻²)
0/5MPa
1.5/5MPa
0/1.5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 15, 1971
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Φ/(m²s⁻²)
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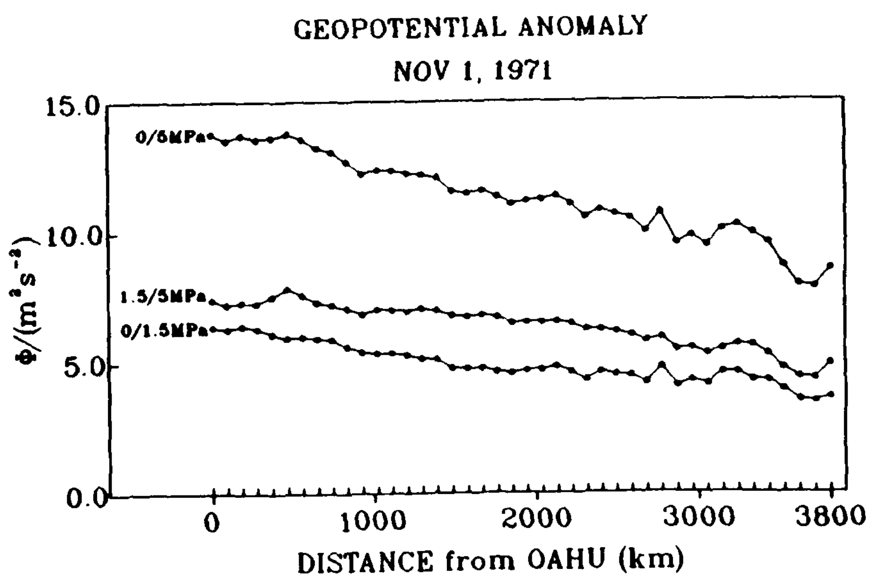
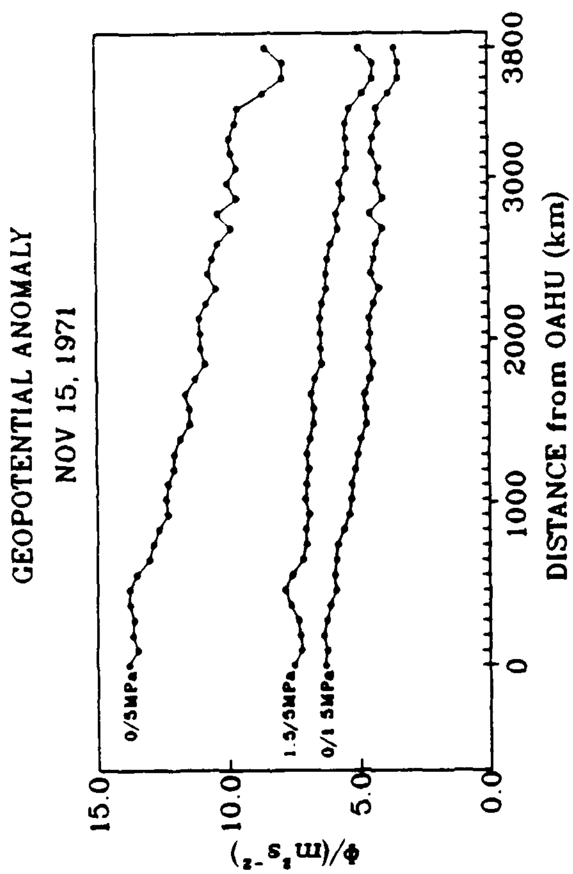
1.5/5MPa
0/1.5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
NOV 1, 1971
15.0
10.0
5.0
0.0
Φ/(m²s⁻²)
0/5MPa
1.5/5MPa
0/1.5MPa
0
1000
2000
3000
3800
DISTANCE from OAHU (km)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1.5/5MPa
0/1.5MPa
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0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
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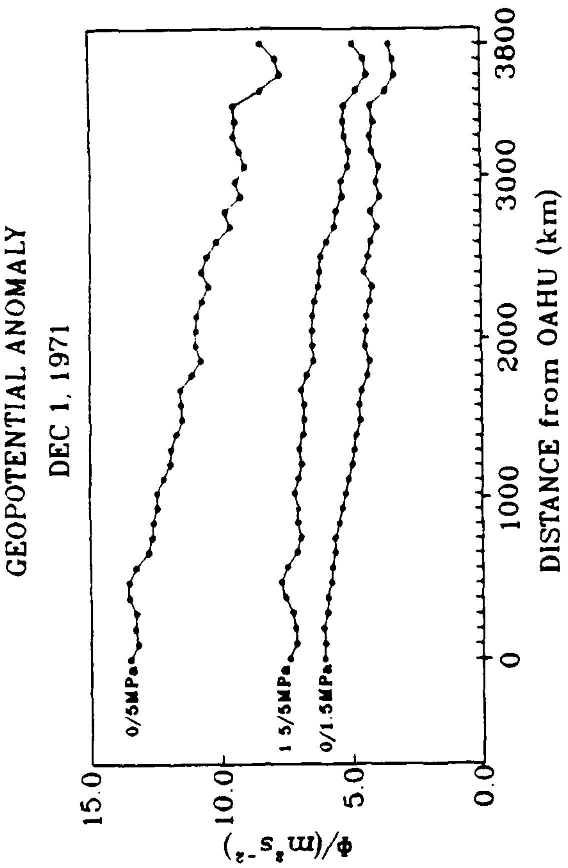
DISTANCE from OAHU (km)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$\Phi/(m^2s^{-2})$
0
1000
2000
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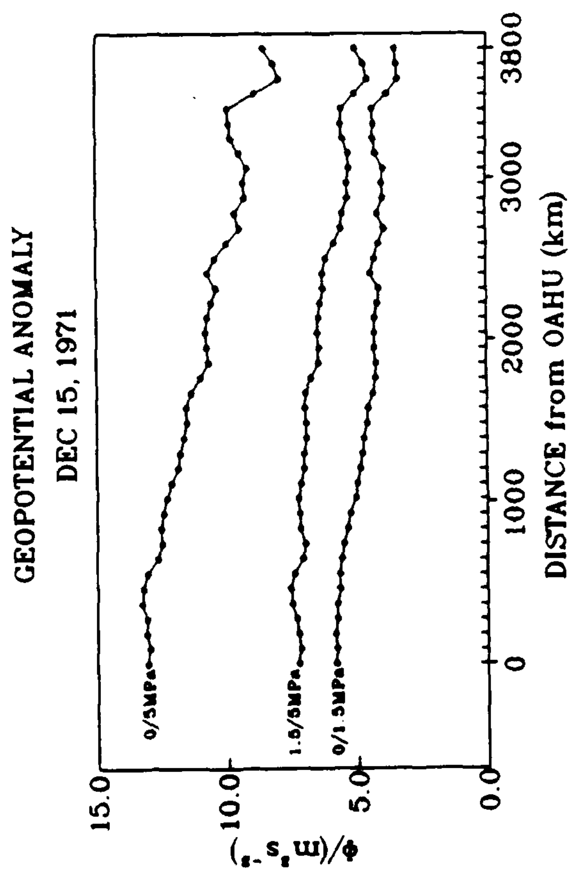
DISTANCE from OAHU (km)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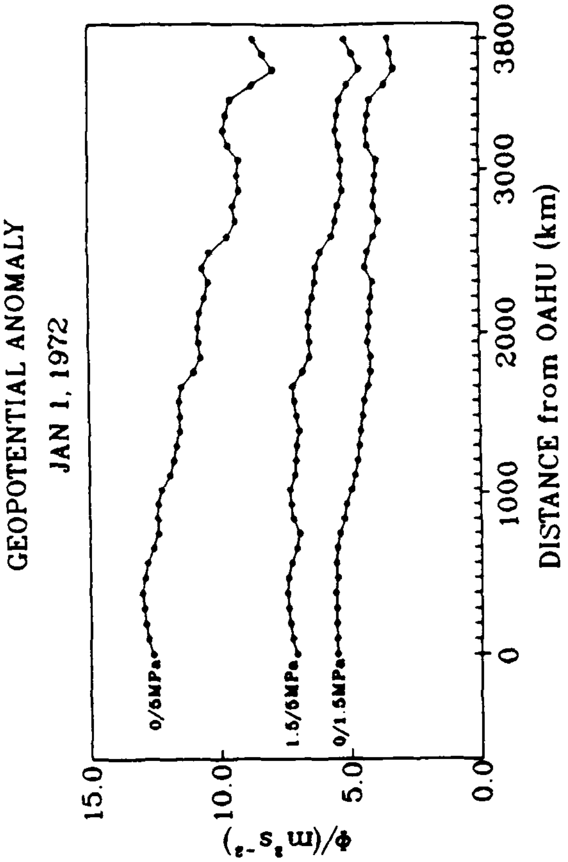
DISTANCE from OAHU (km)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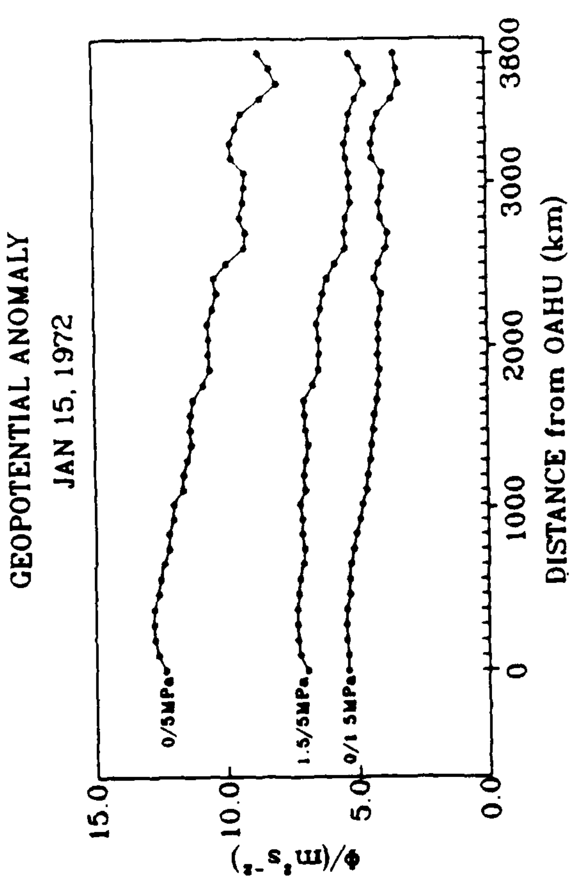
DISTANCE from OAHU (km)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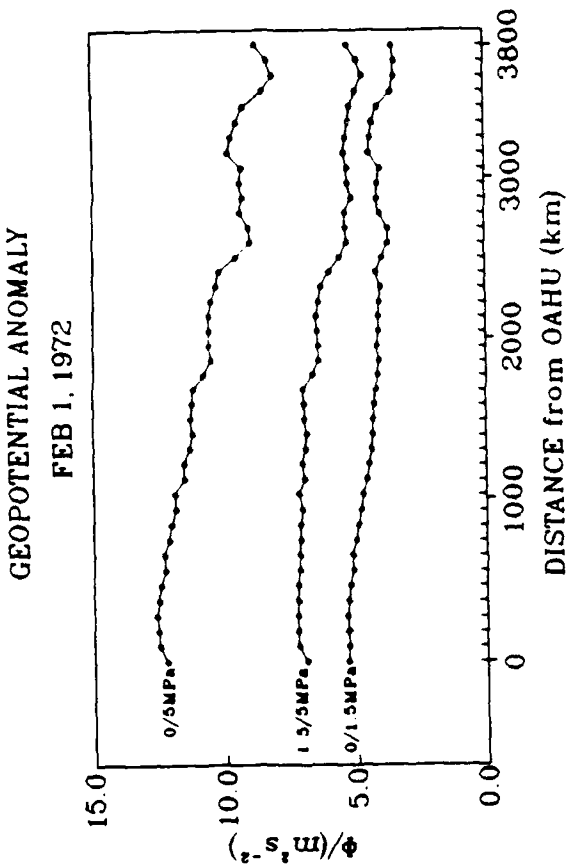
DISTANCE from OAHU (km)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1000
2000
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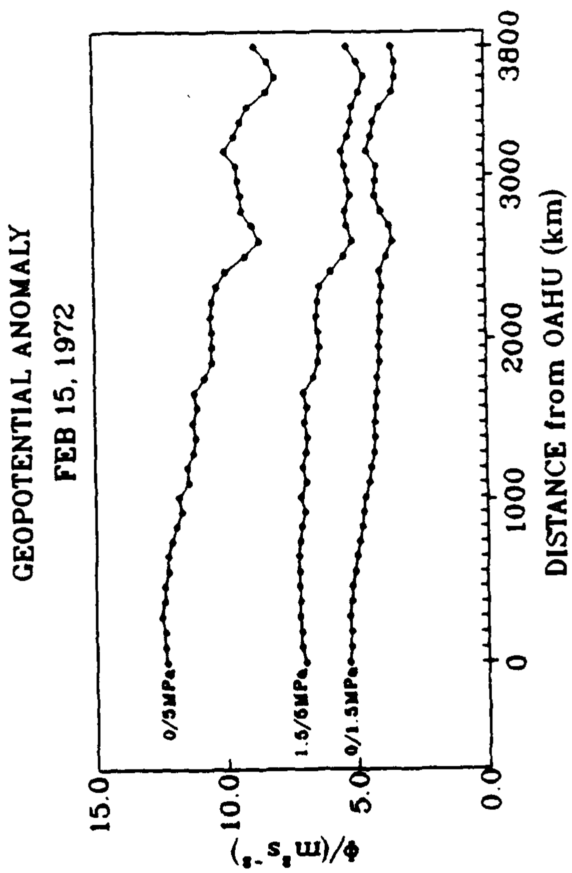
DISTANCE from OAHU (km)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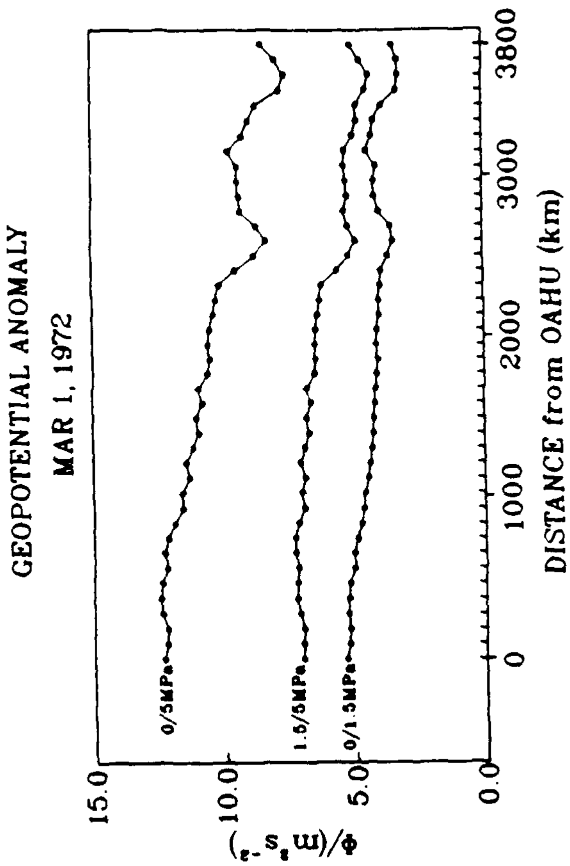
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAR 1, 1972
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1.5/5MPa
0/1.5MPa
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5.0
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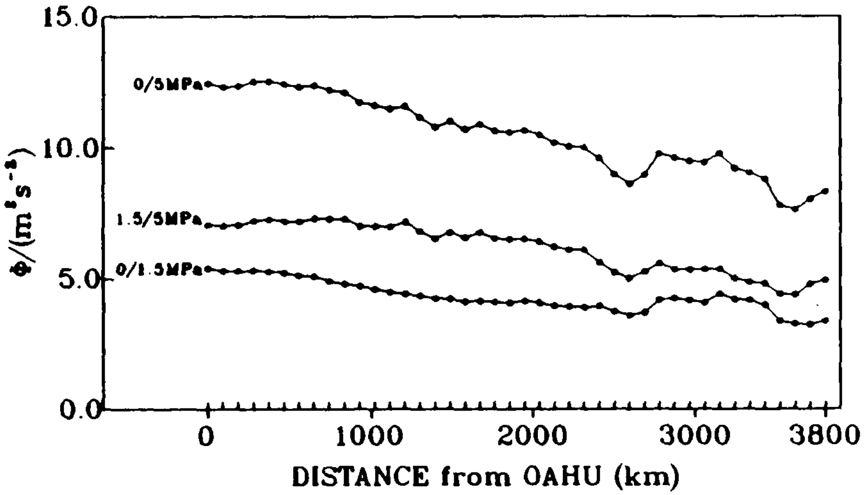
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
MAR 15, 1972



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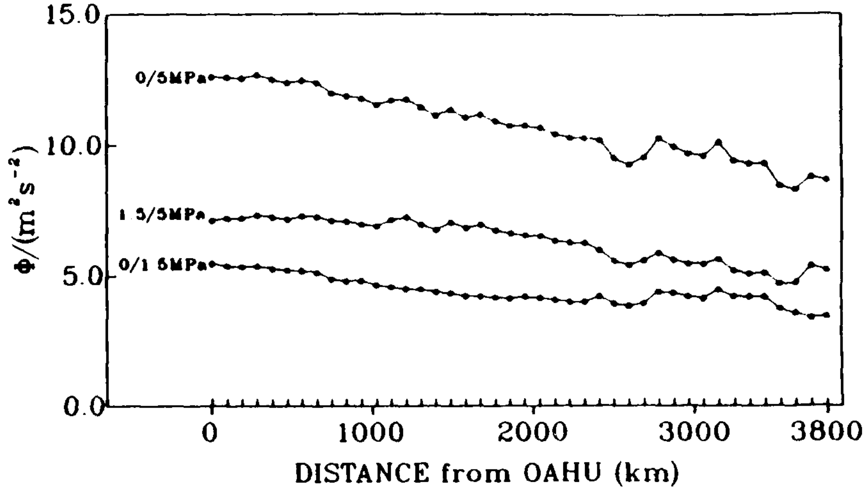
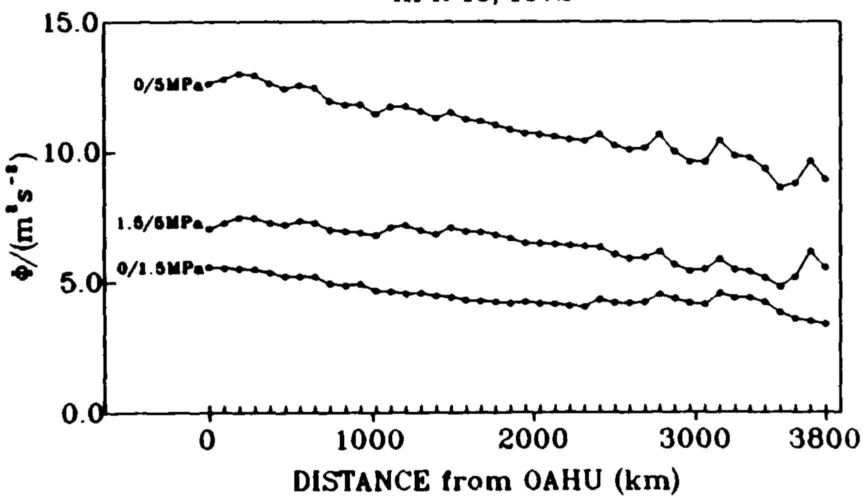
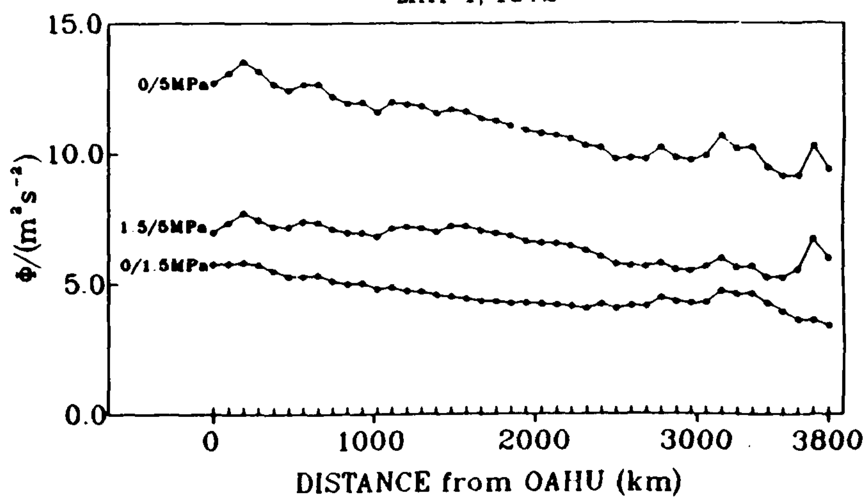
APR 1, 1972



GEOPOTENTIAL ANOMALY
APR 15, 1972



GEOPOTENTIAL ANOMALY
MAY 1, 1972



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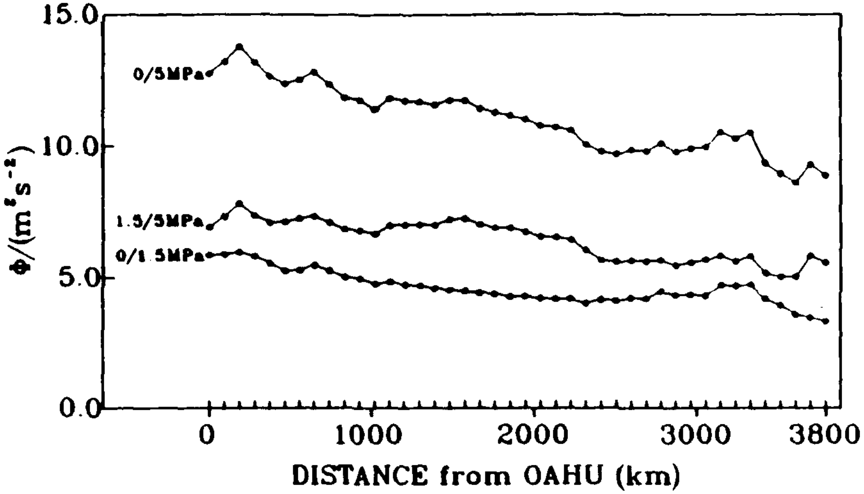

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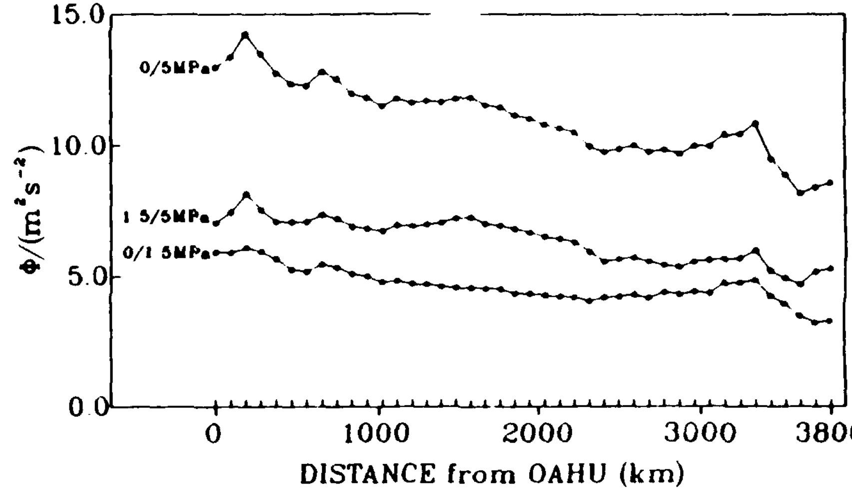

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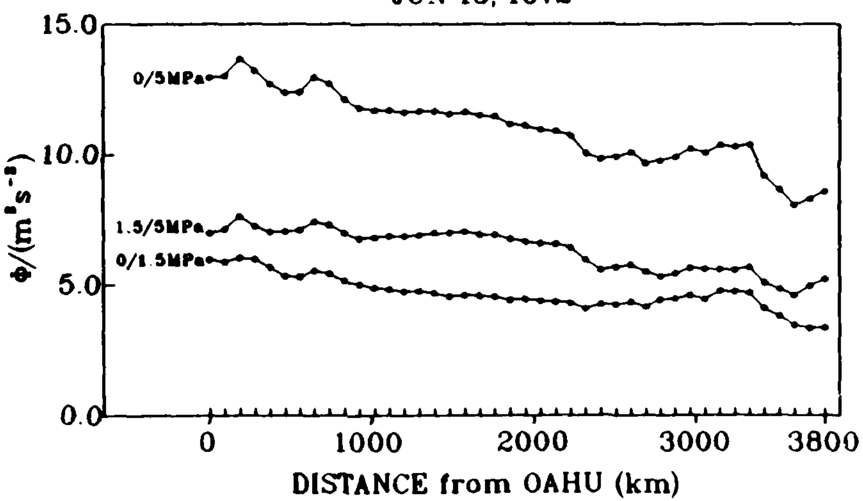

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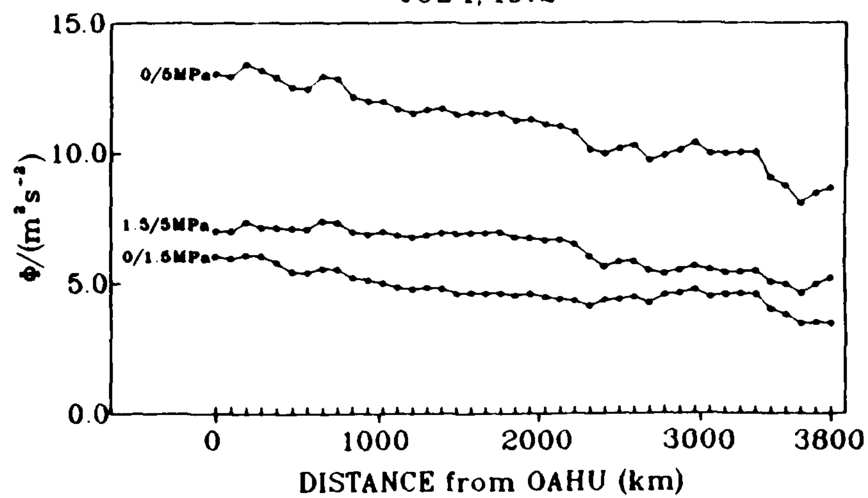

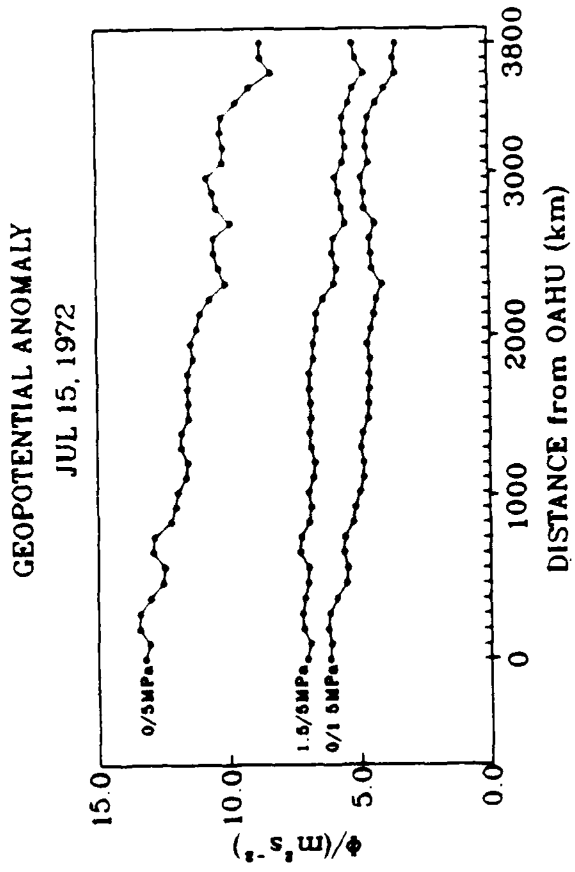
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JUL 15, 1972
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0/1.5MPa
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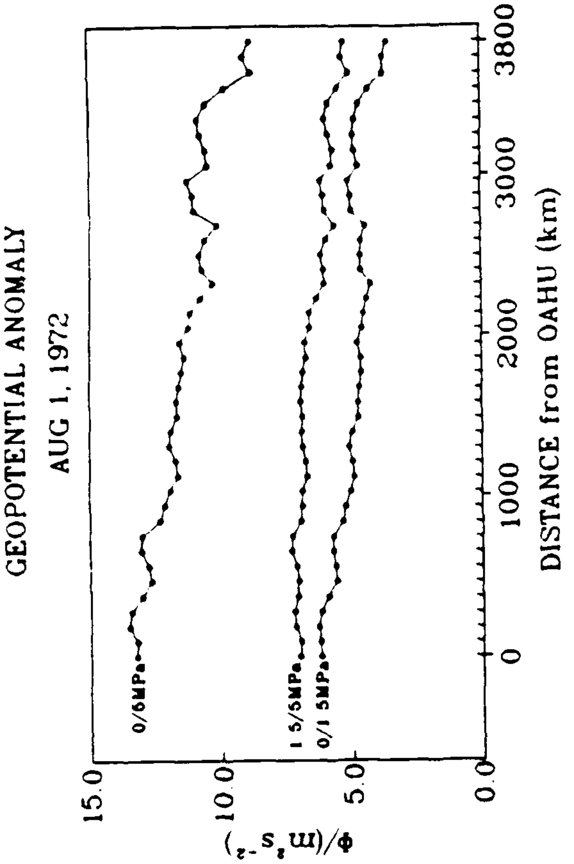
5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)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AUG 1, 1972
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1.5/5MPa
0/1.5MPa
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Φ/(m²s⁻²)
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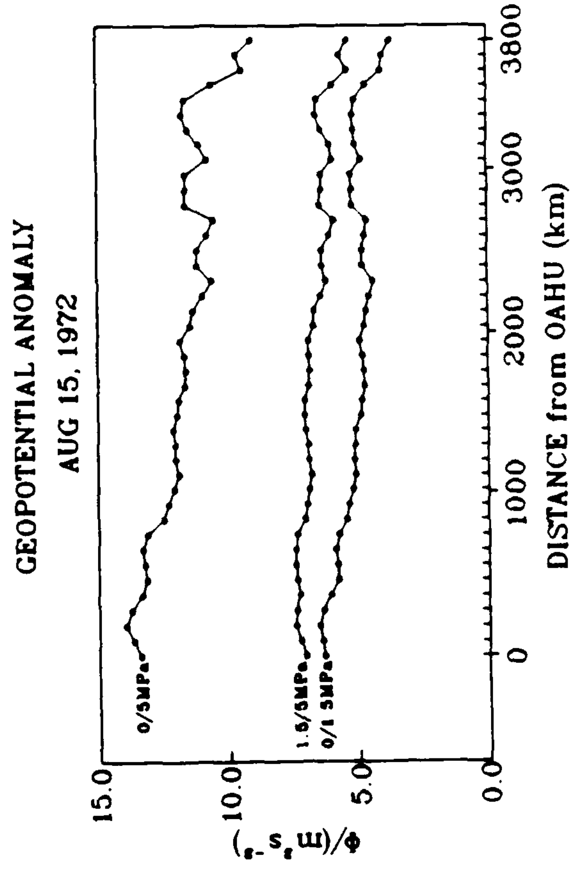
1000
2000
3000
3800
DISTANCE from OAHU (km)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Φ/(m²s⁻²)
0
1000
2000
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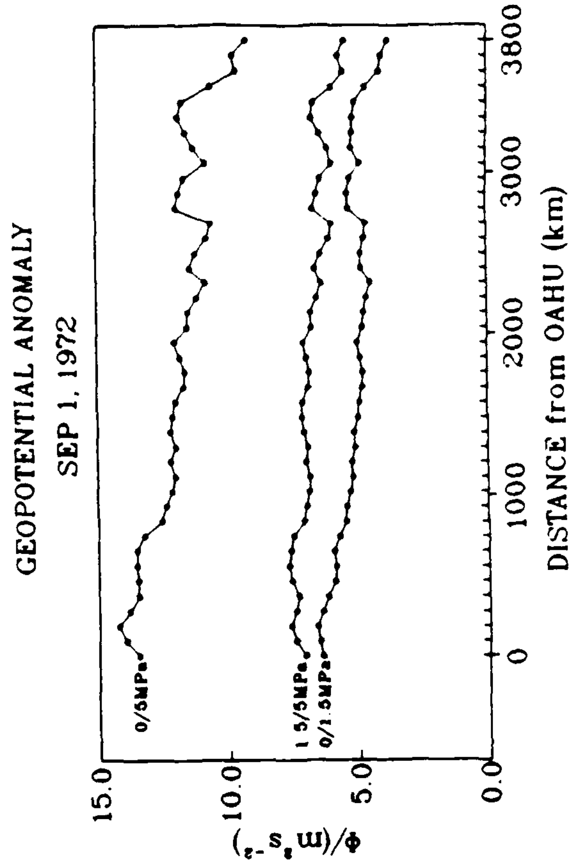
3800
DISTANCE from OAHU (km)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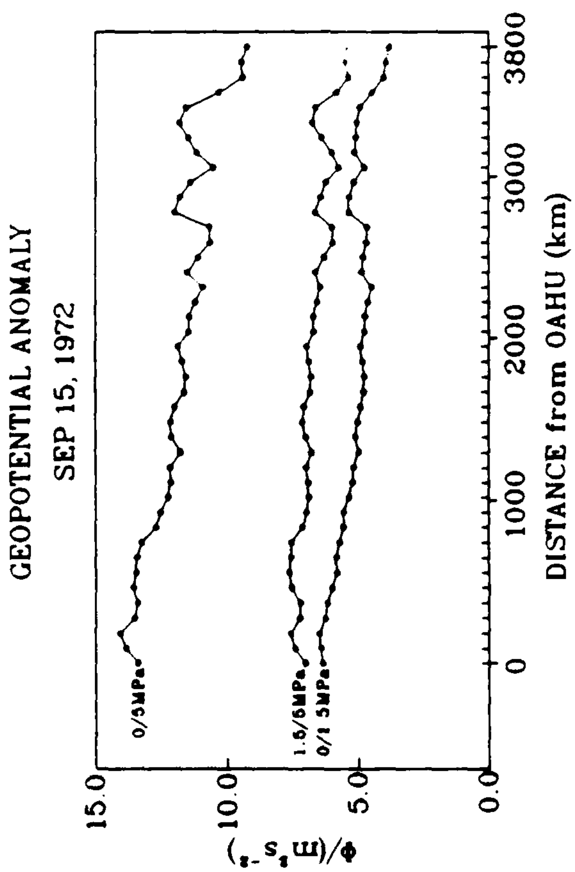
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
SEP 15, 1972
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Φ/(m²s⁻²)
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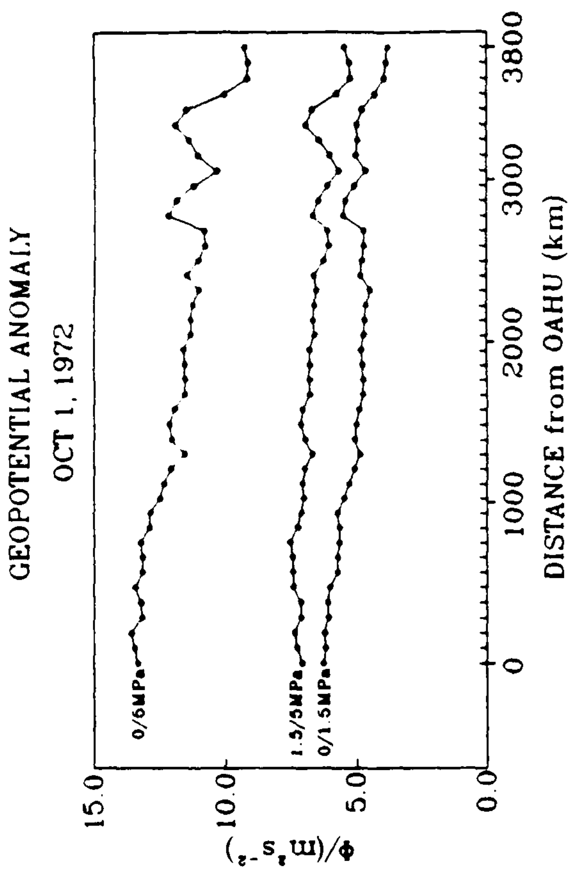
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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0/1.5MPa
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Φ/(m²s⁻²)
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1000
2000
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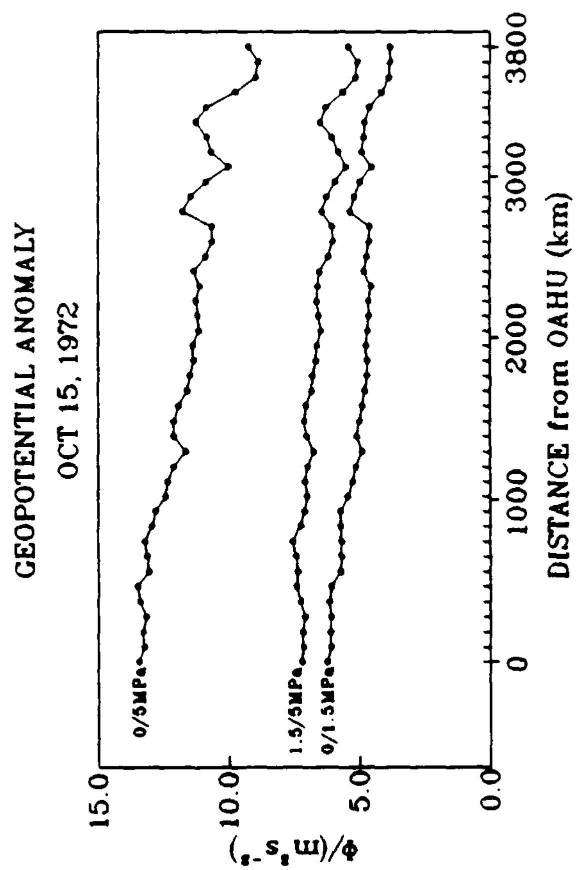
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 15, 1972
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0/1.5MPa
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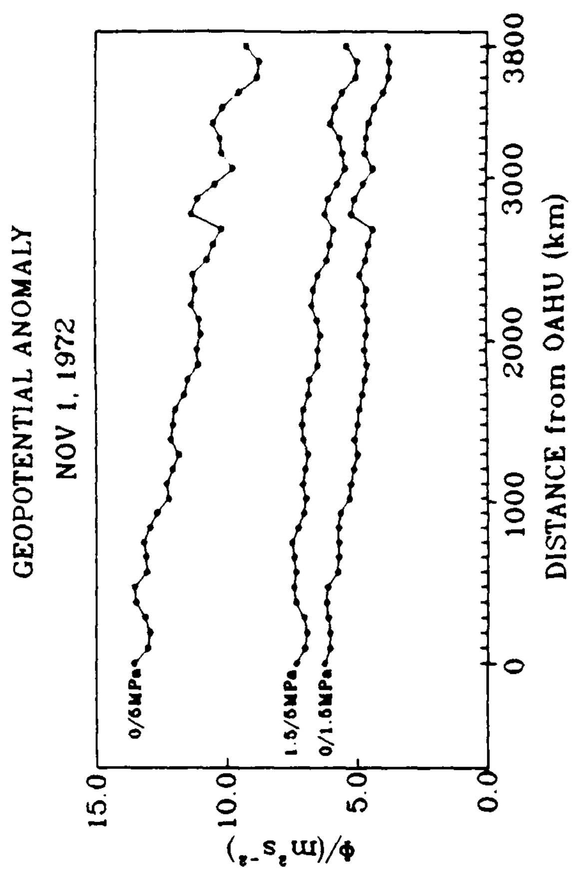
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
NOV 1, 1972
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1.5/5MPa
0/1.5MPa
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5.0
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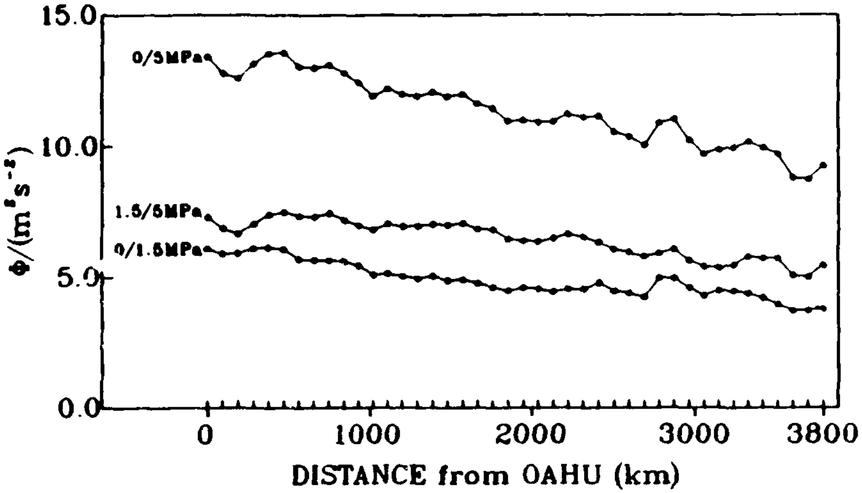
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
NOV 15, 1972



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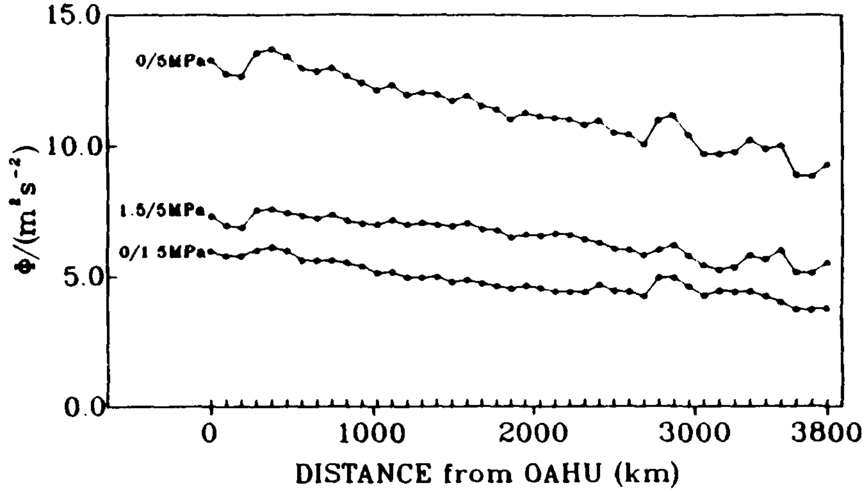
DEC 1, 1972



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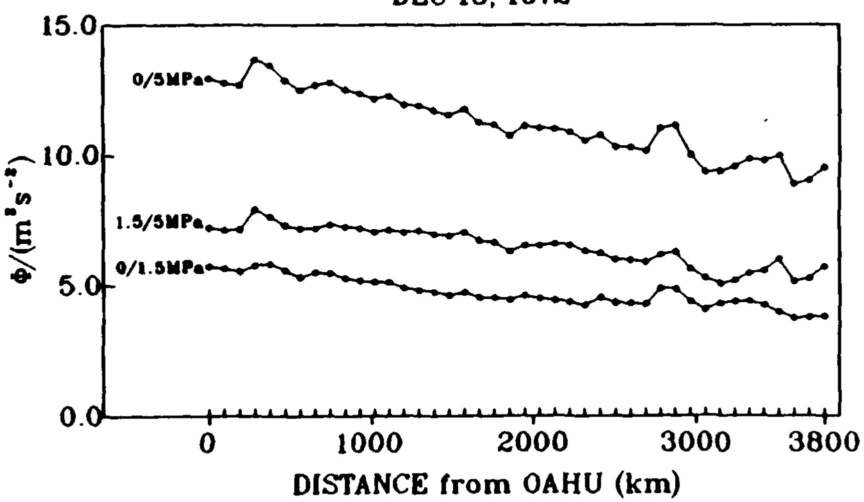
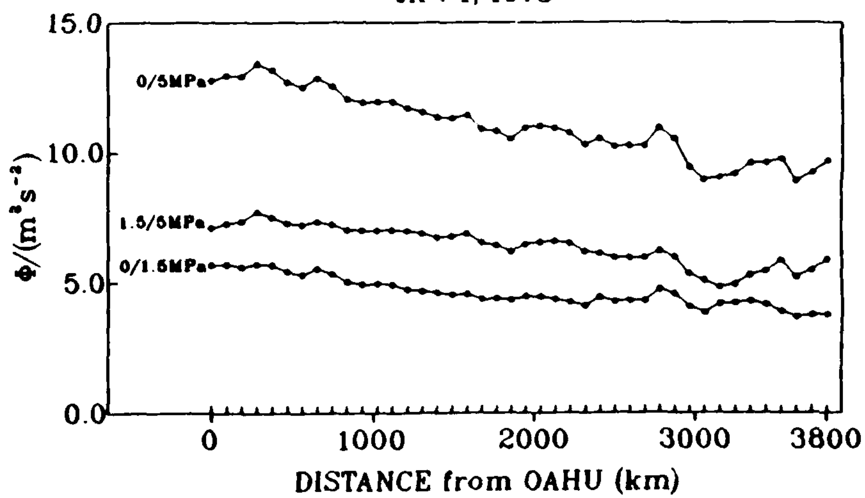
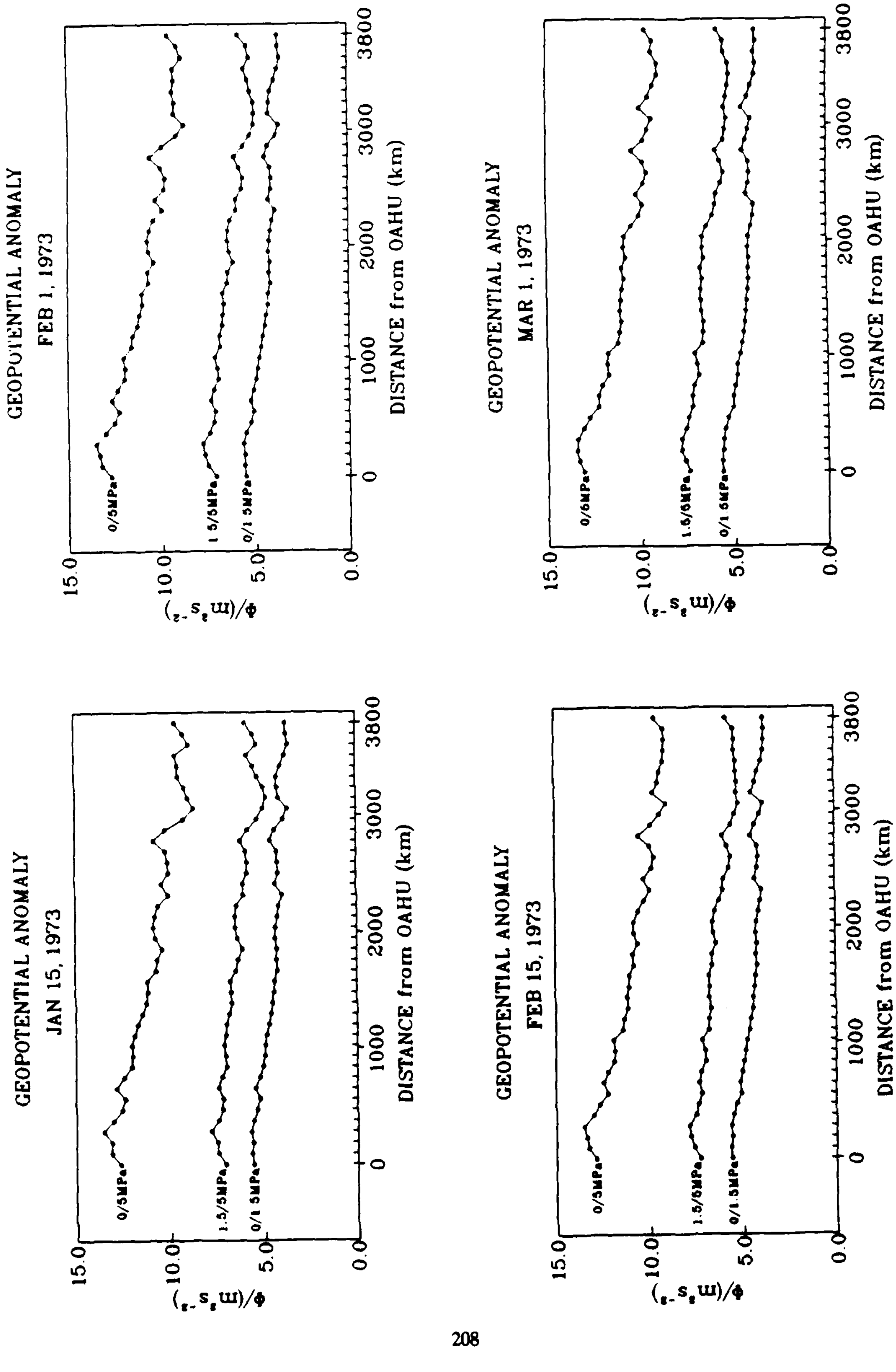
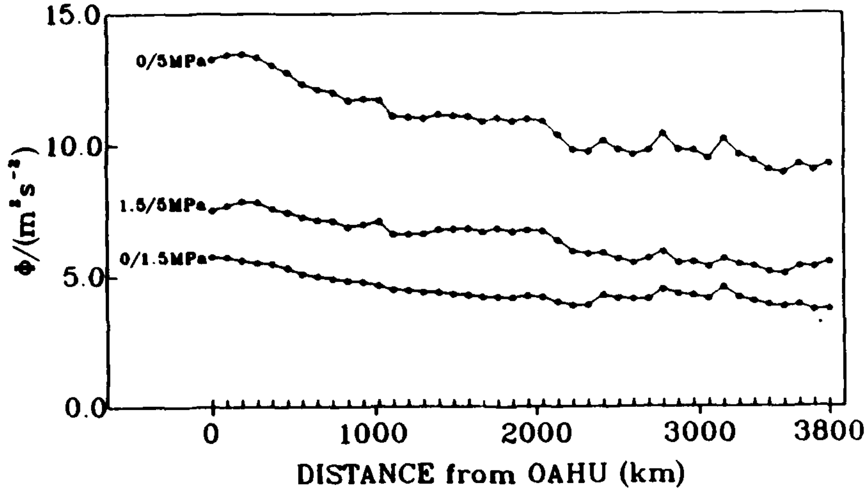


GEOPOTENTIAL ANOMALY
JAN 1, 1973




GEOPOTENTIAL ANOMALY
JAN 15, 1973
GEOPOTENTIAL ANOMALY
FEB 1, 1973
GEOPOTENTIAL ANOMALY
FEB 15, 1973
GEOPOTENTIAL ANOMALY
MAR 1, 1973
0/5MPa
1.5/5MPa
0/1.5MPa
DISTANCE from OAHU (km)
$\phi/(m^2s^{-2})$
15.0
10.0
5.0
0.0
0
1000
2000
3000
3800

GEOPOTENTIAL ANOMALY
MAR 15, 1973



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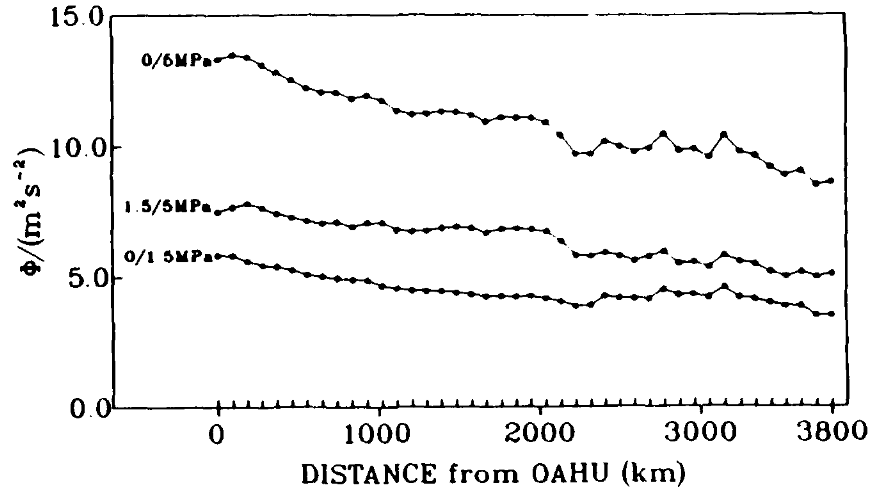

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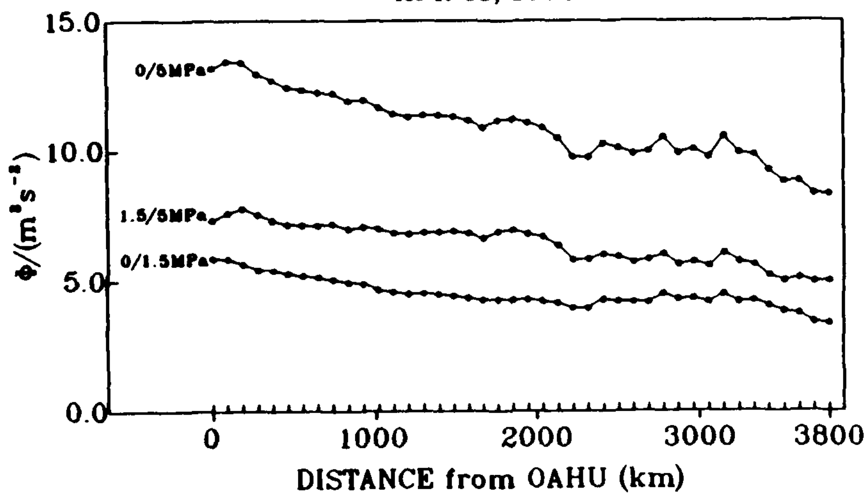

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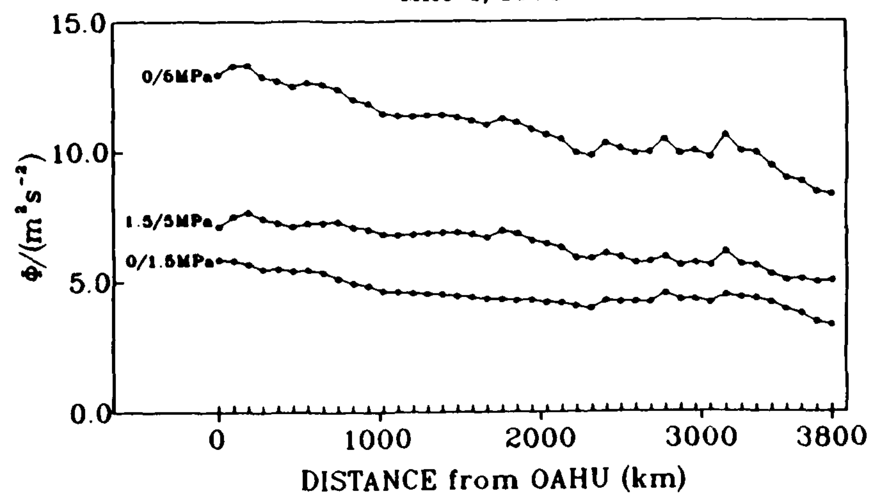

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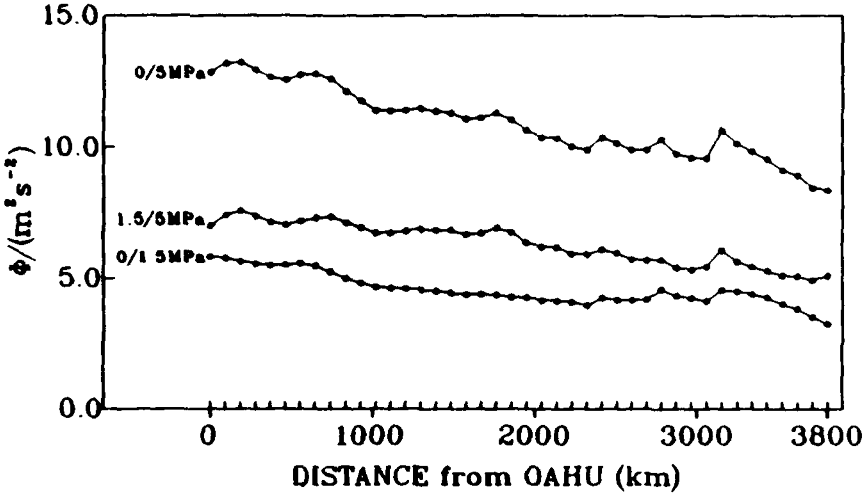

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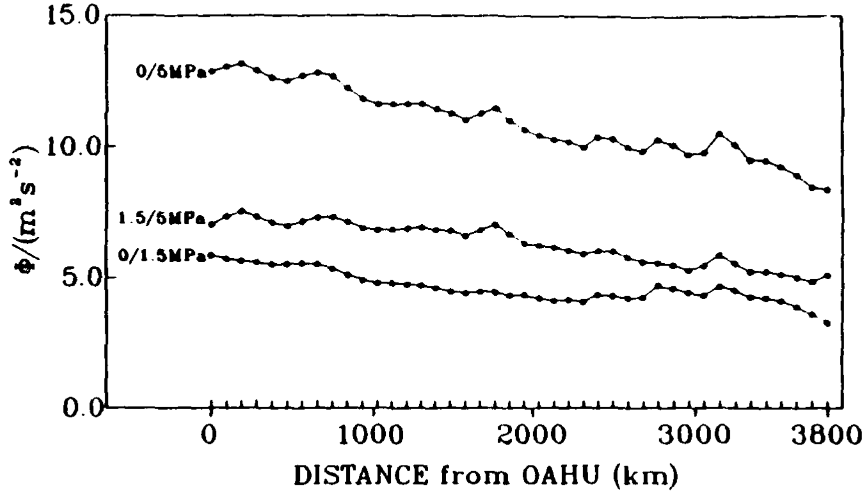

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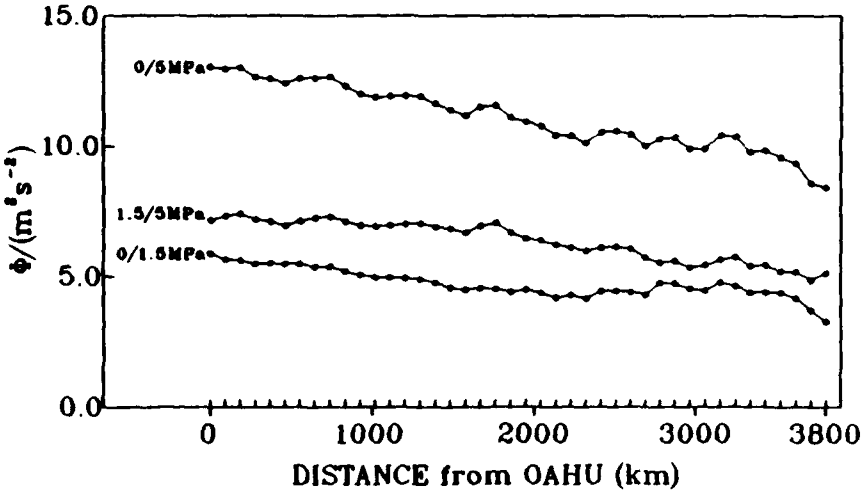

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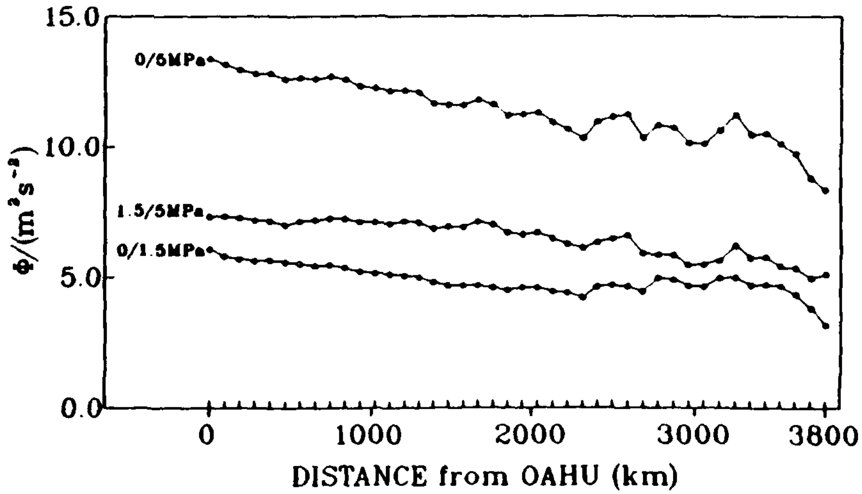

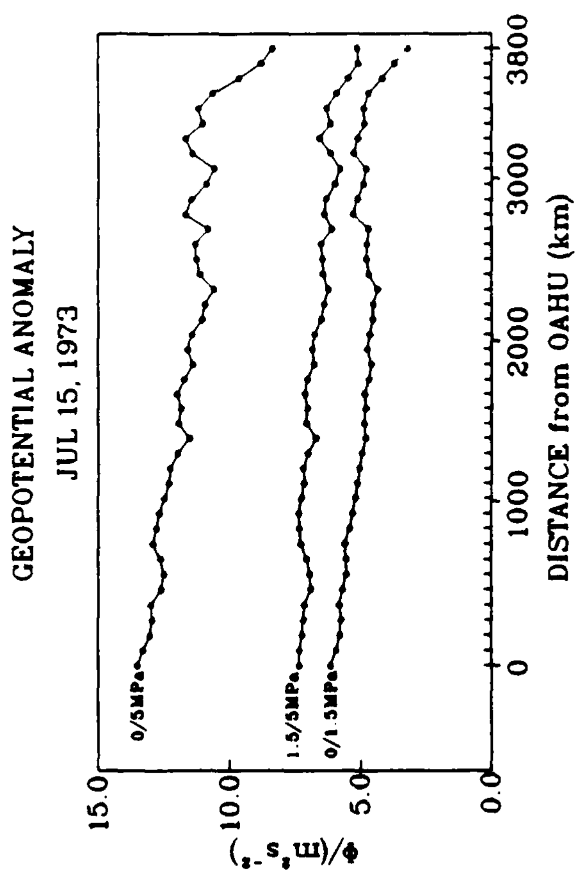
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JUL 15, 1973
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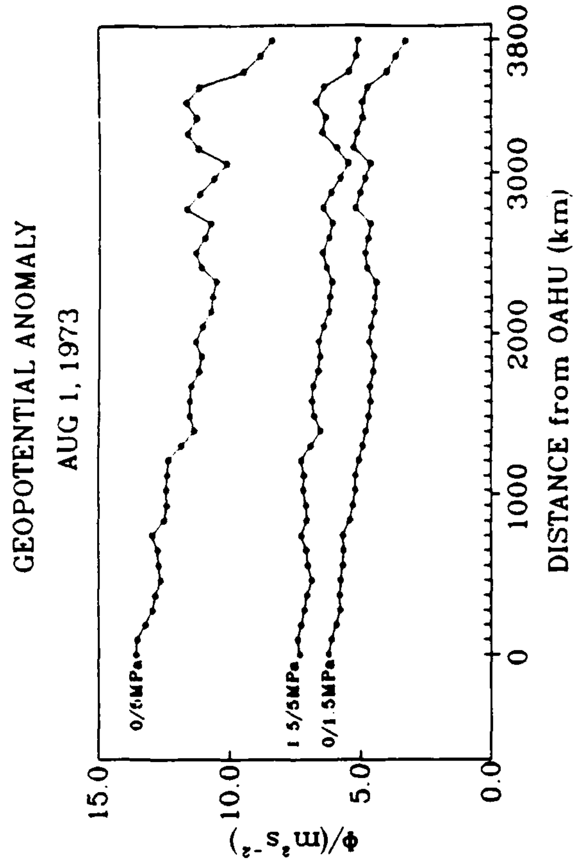
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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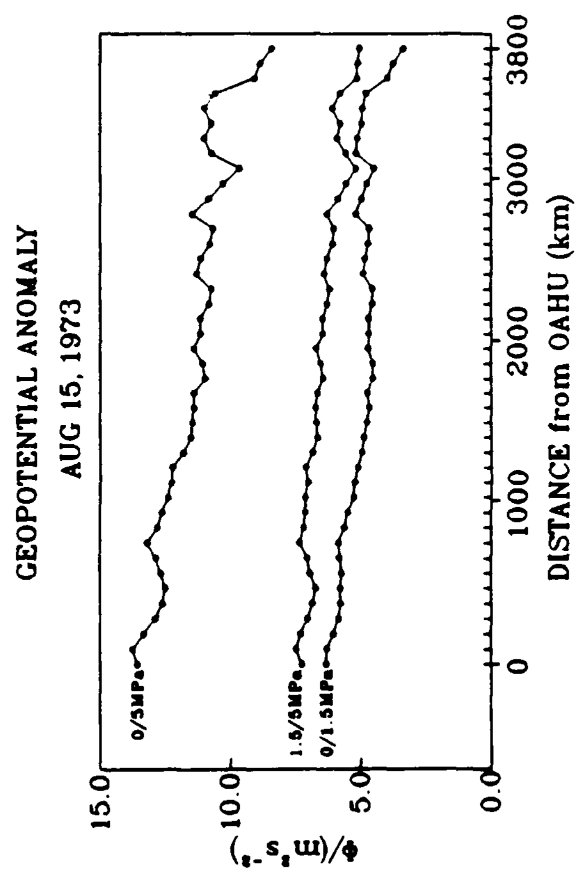
DISTANCE from OAHU (km)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1000
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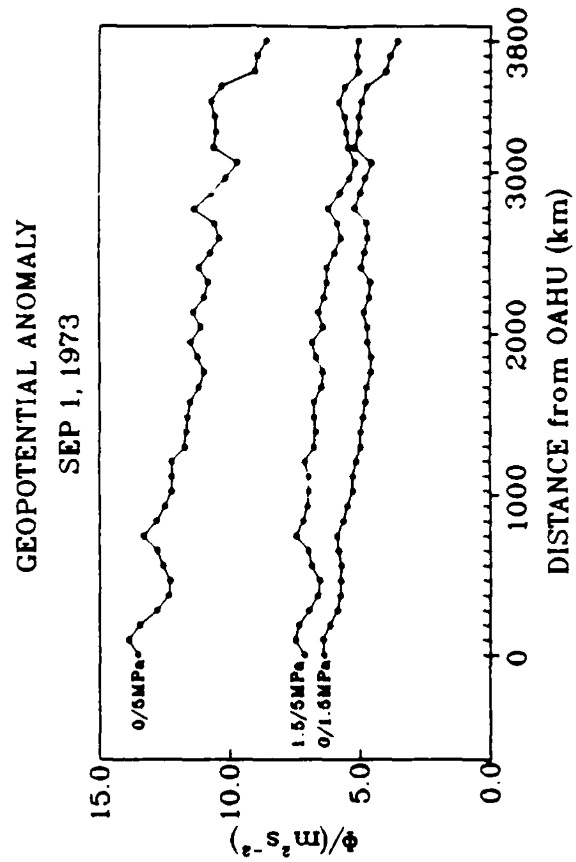
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
SEP 1, 1973
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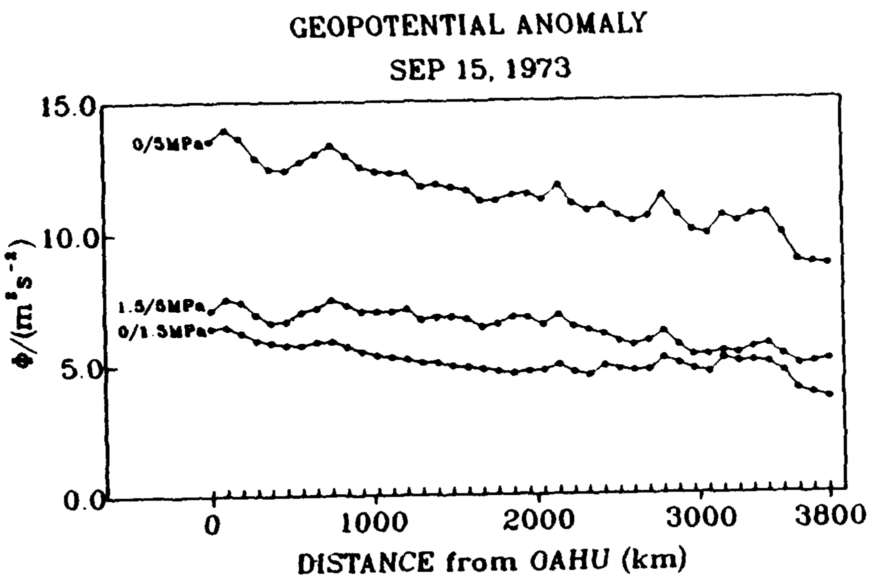
DISTANCE from OAHU (km)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Φ/(m²s⁻²)
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1000
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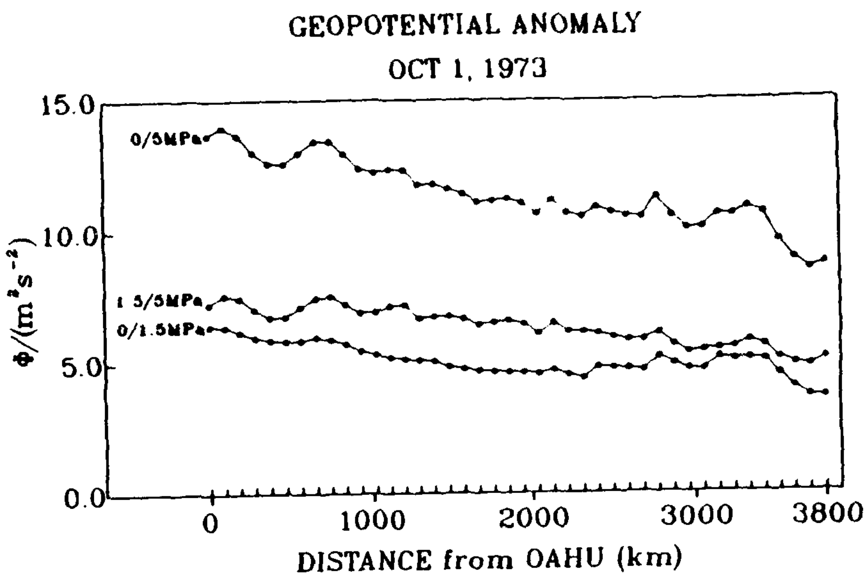
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 1, 1973
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0/1.5MPa
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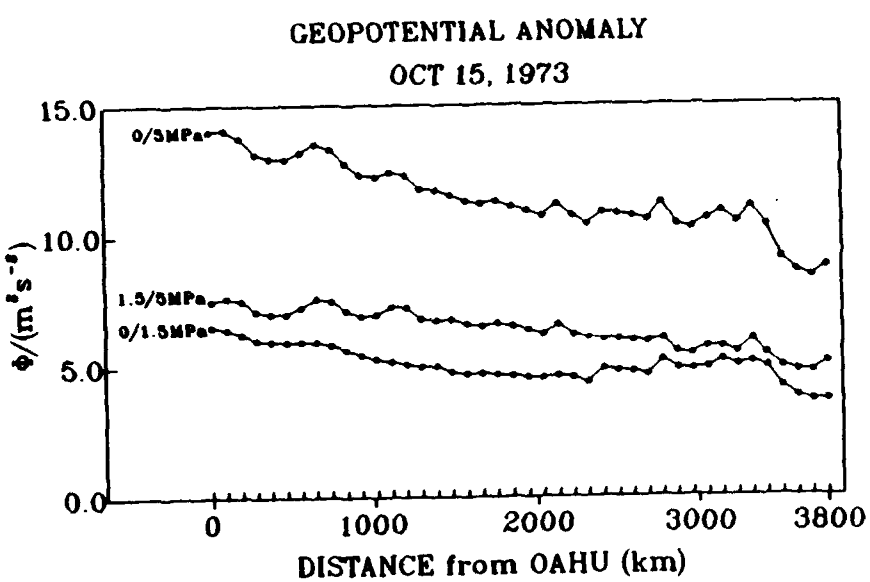
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 15, 1973
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0/1.5MPa
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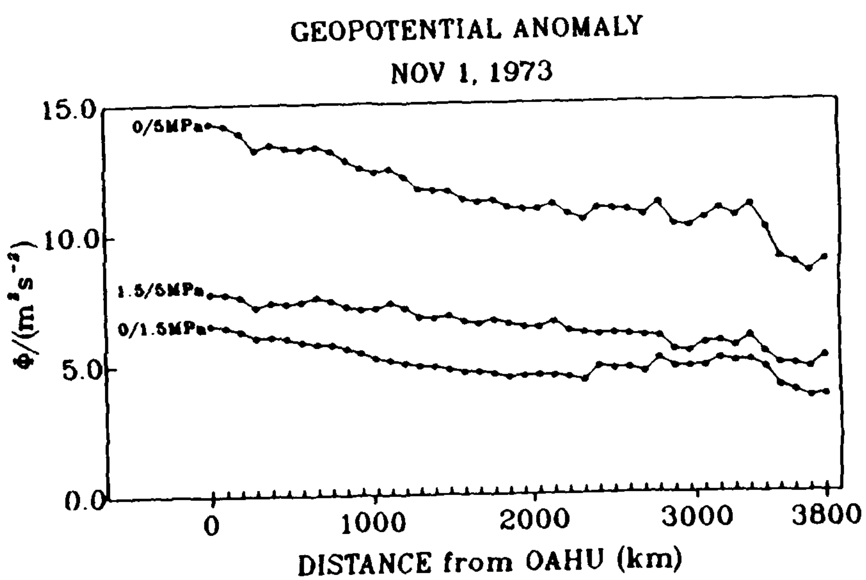
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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0/1.5MPa
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Φ/(m²s⁻²)
0
1000
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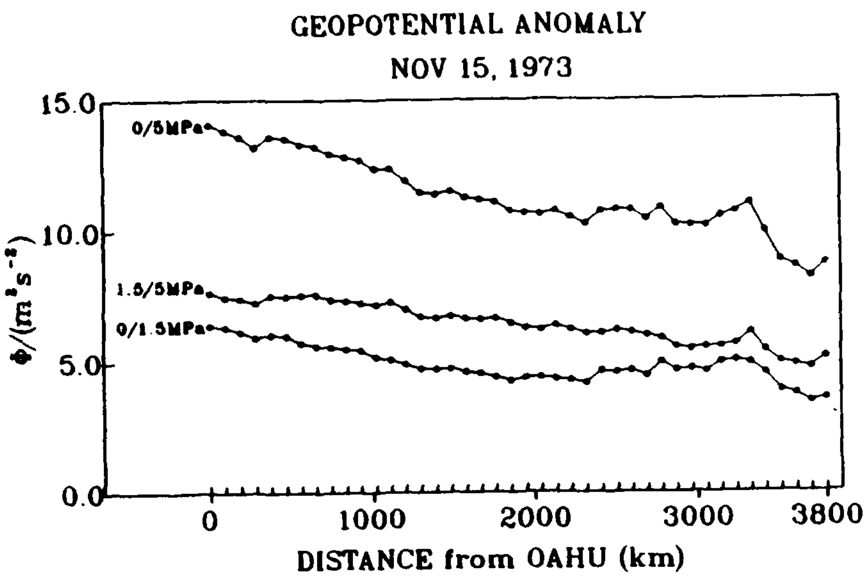
DISTANCE from OAHU (km)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1.5/5MPa
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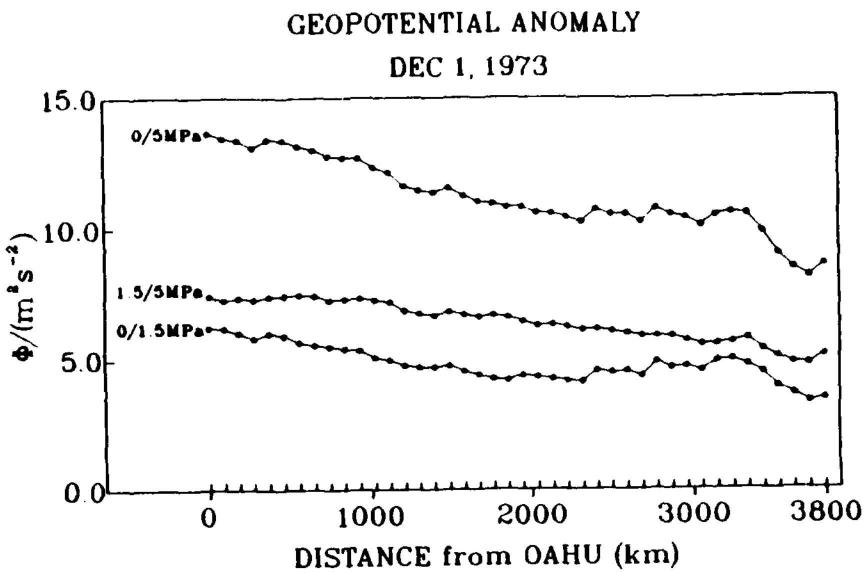
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
DEC 1, 1973
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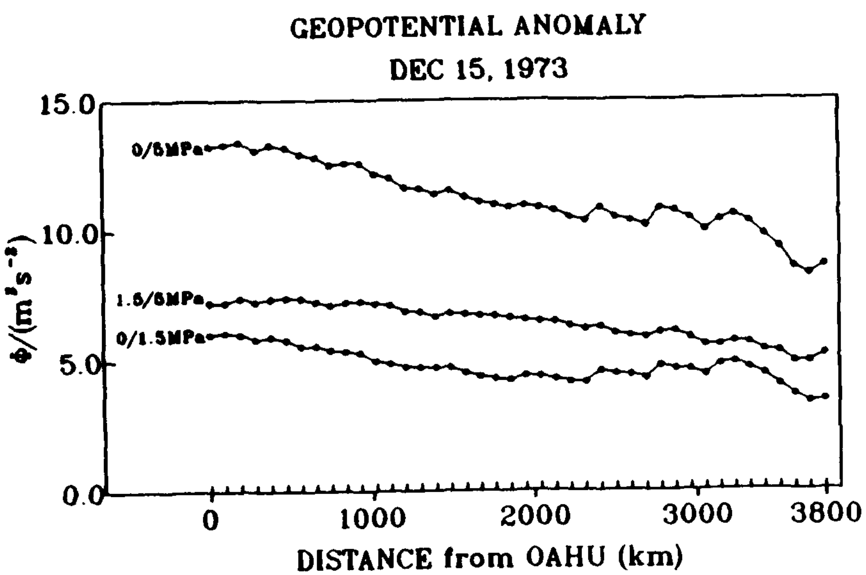
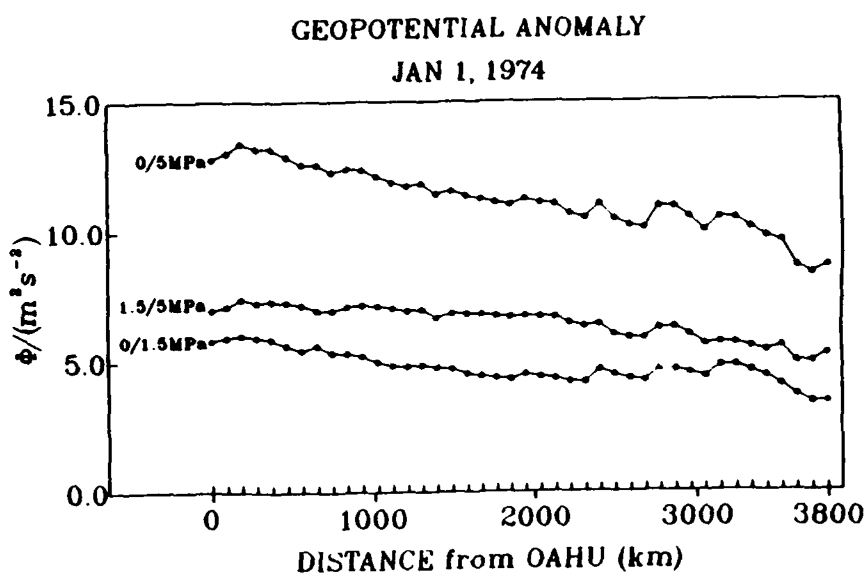
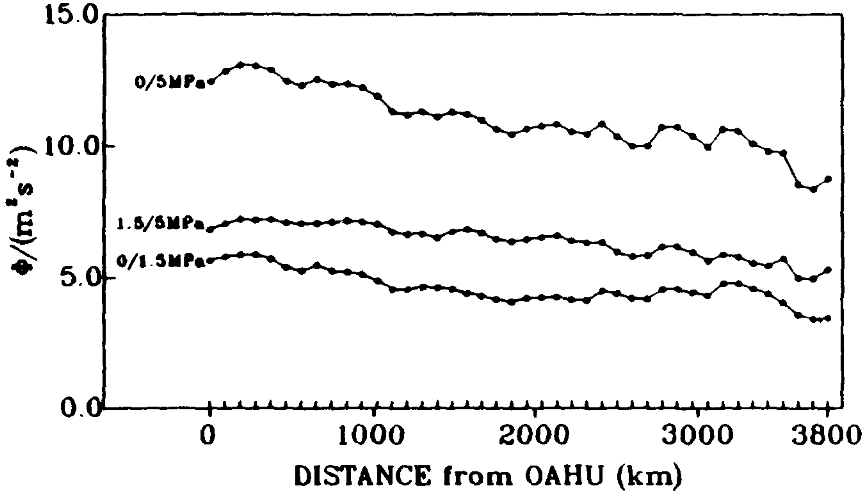
1.5/5MPa
0/1.5MPa
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)

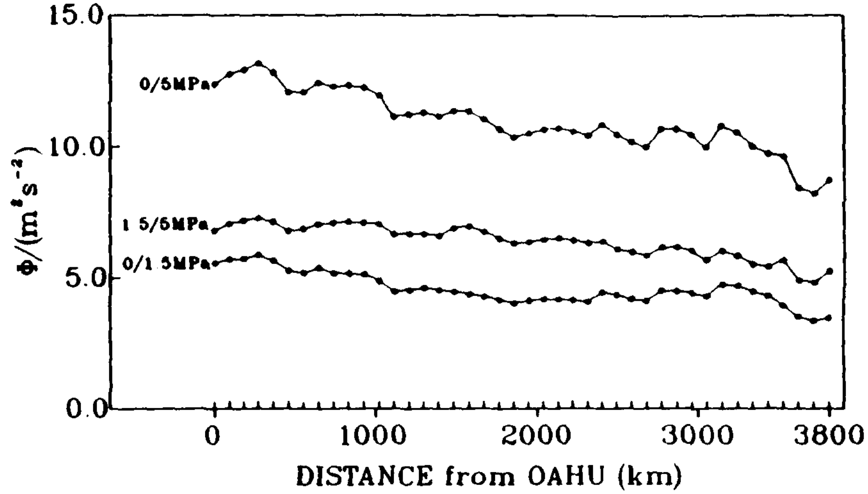

GEOPOTENTIAL ANOMALY
DEC 15, 1973
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JAN 1, 1974
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
JAN 15, 1974



GEOPOTENTIAL ANOMALY
FEB 1, 1974



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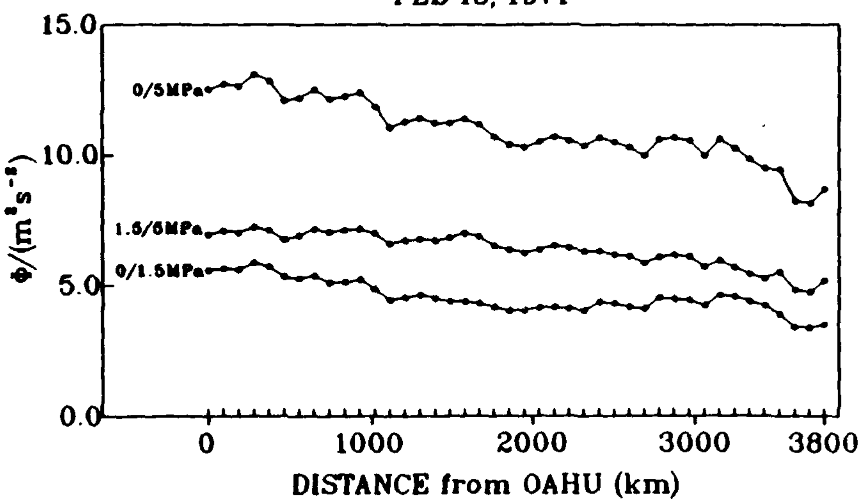
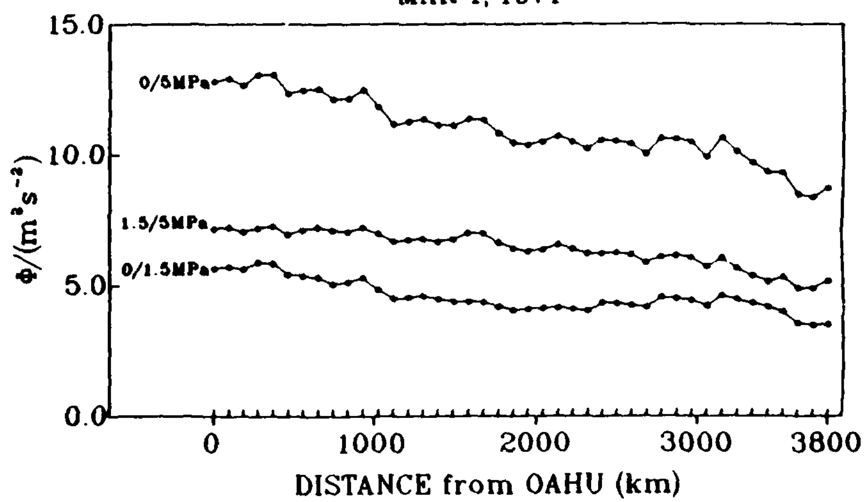
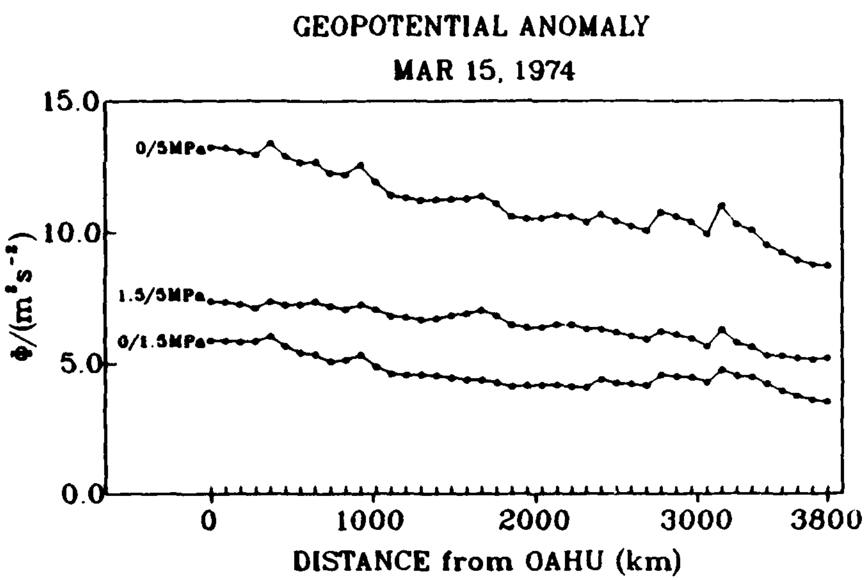
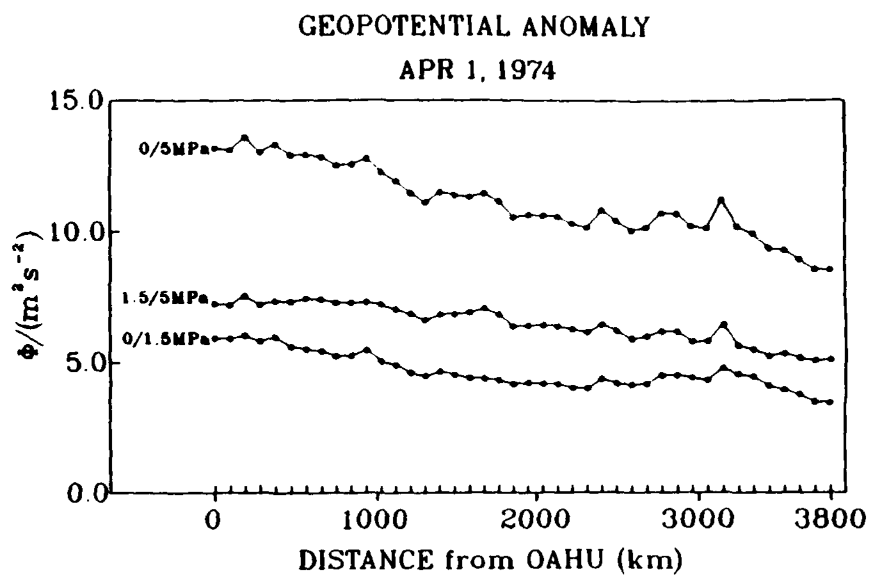
FEB 15, 1974



GEOPOTENTIAL ANOMALY
MAR 1, 1974




GEOPOTENTIAL ANOMALY
MAR 15, 1974
0/5MPa
1.5/5MPa
0/1.5MPa
15.0
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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1.5/5MPa
0/1.5MPa
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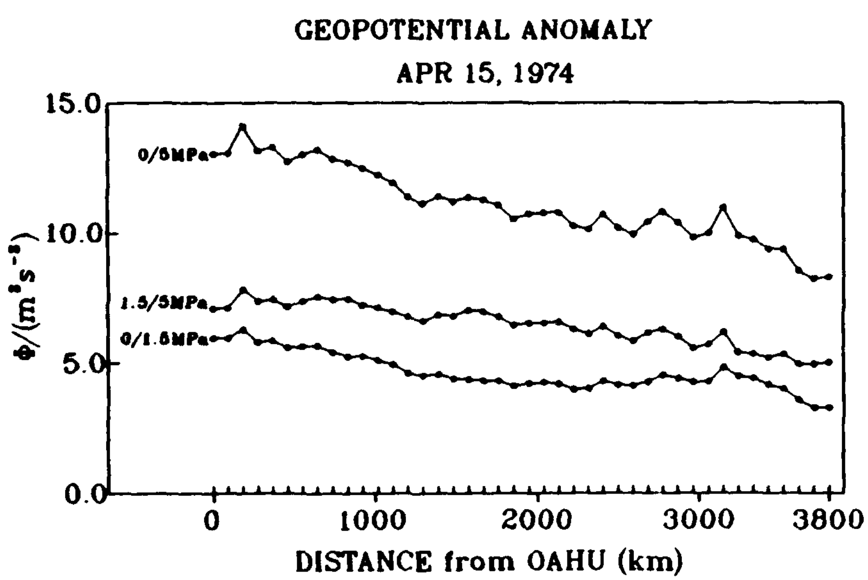
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
APR 15, 1974
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1.5/5MPa
0/1.5MPa
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$\Phi/(m^2s^{-2})$
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1000
2000
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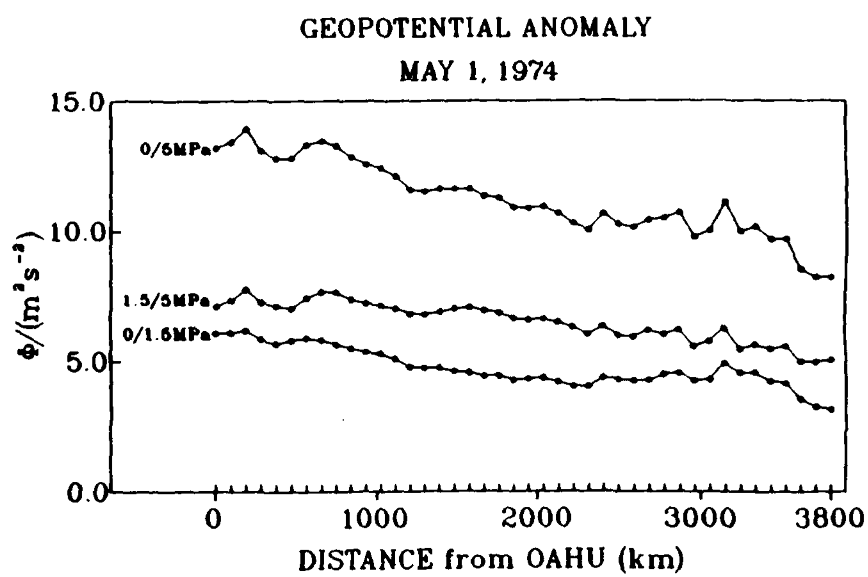
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAY 1, 1974
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1.5/5MPa
0/1.5MPa
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10.0
5.0
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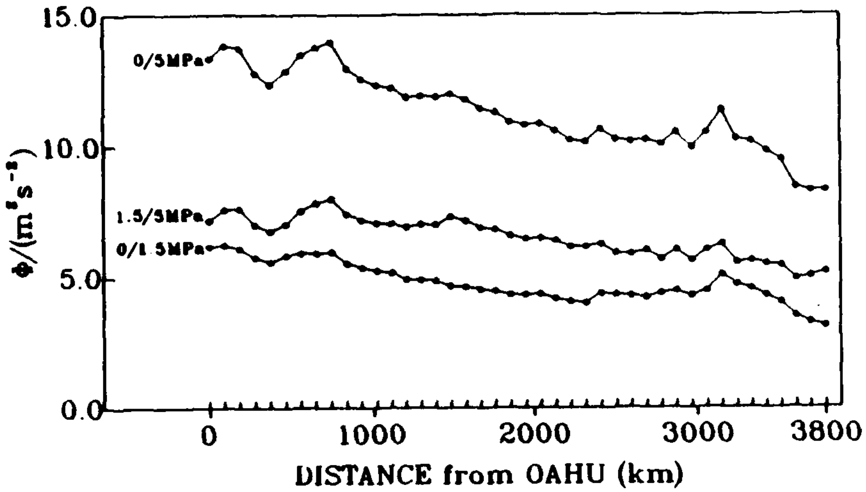
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
MAY 15, 1974



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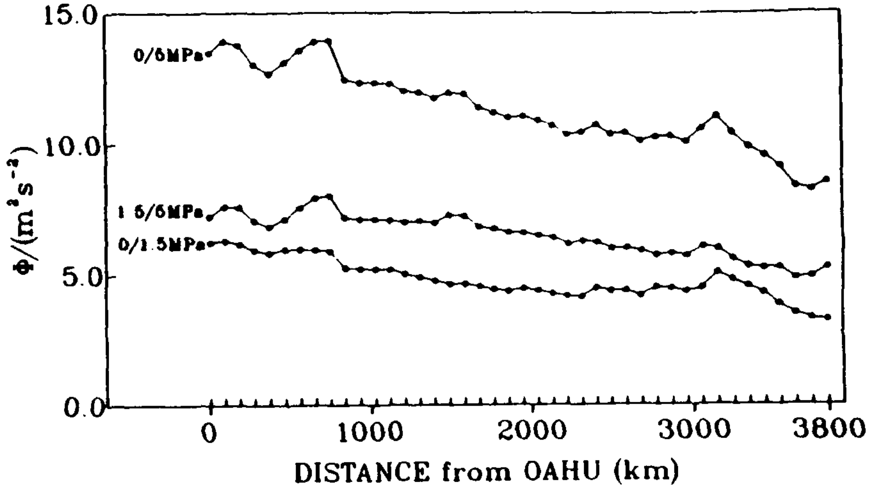

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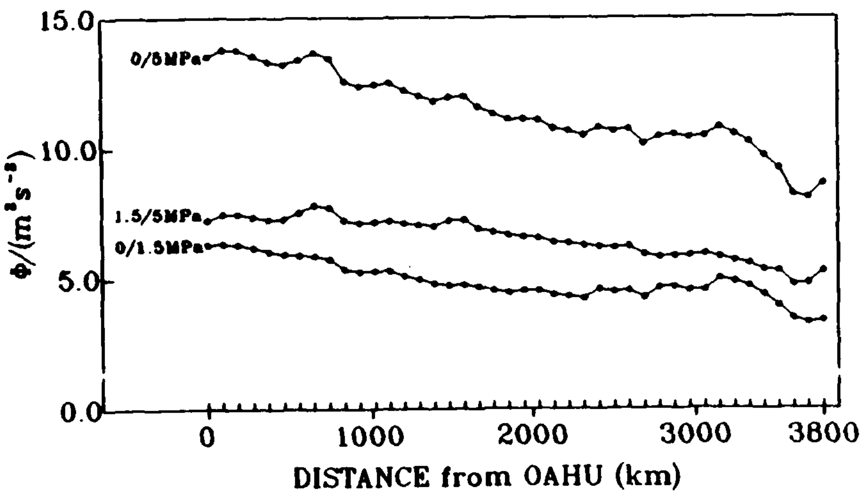
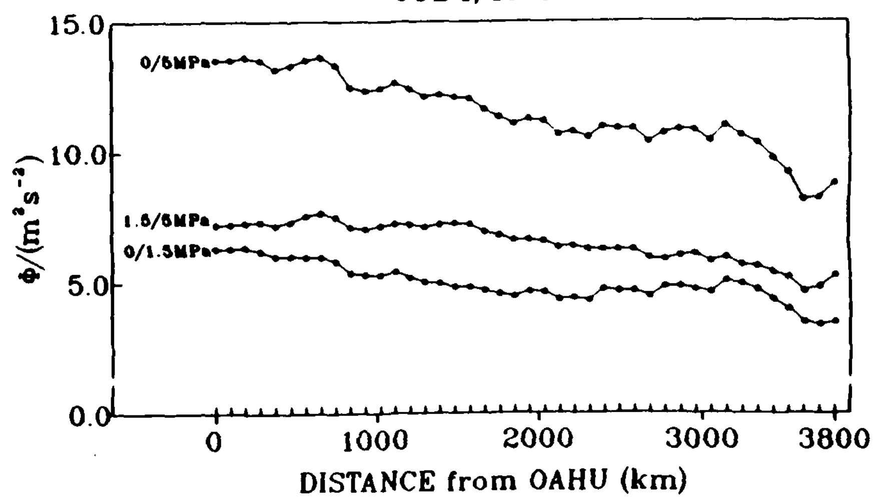


GEOPOTENTIAL ANOMALY
JUL 1, 1974



GEOPOTENTIAL ANOMALY
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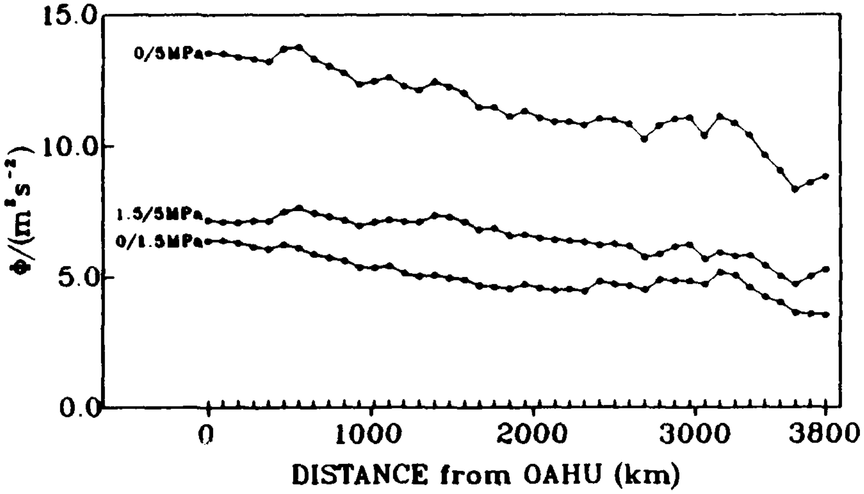
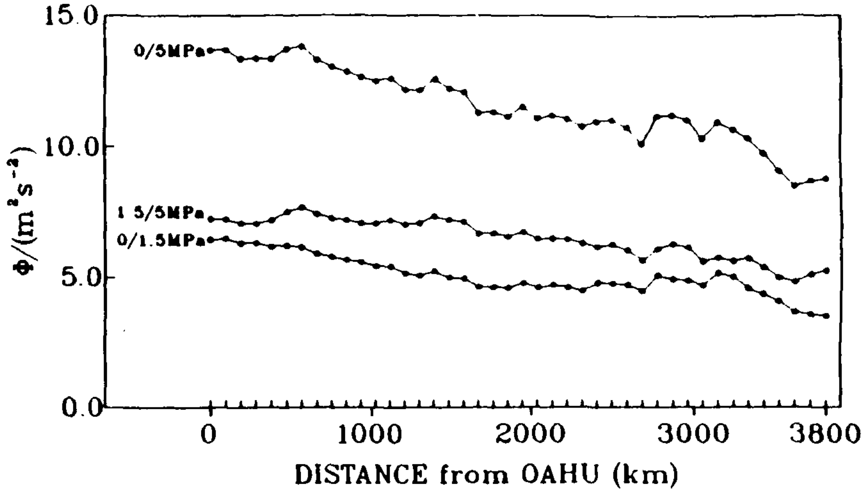
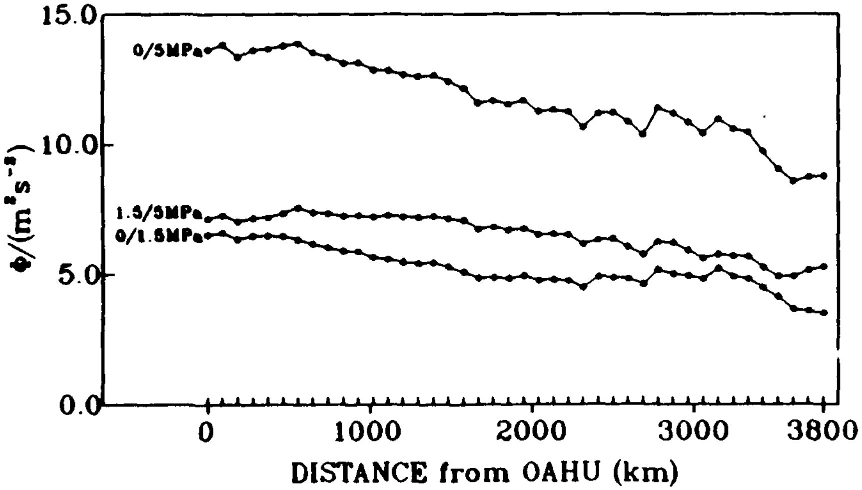


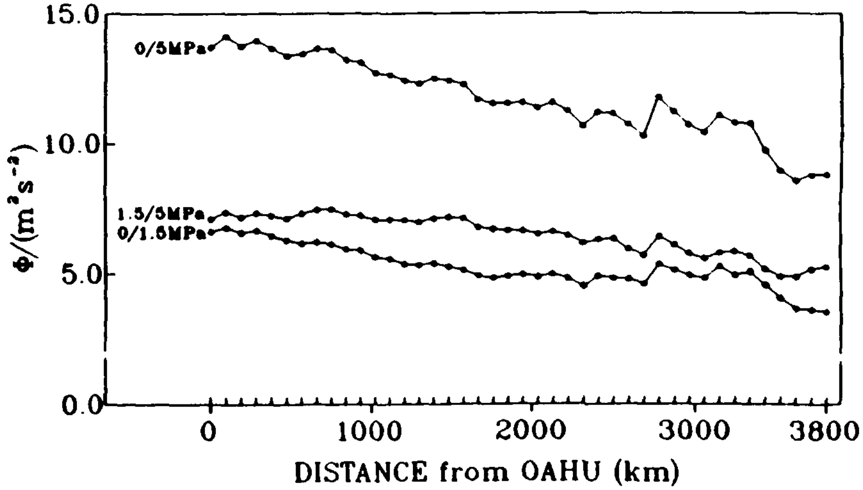
GEOPOTENTIAL ANOMALY
AUG 1, 1974

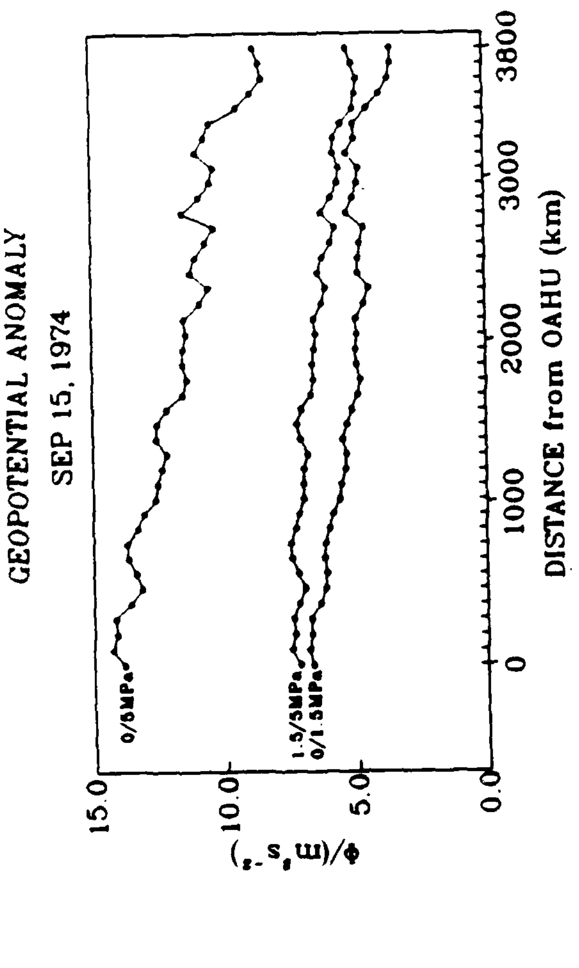


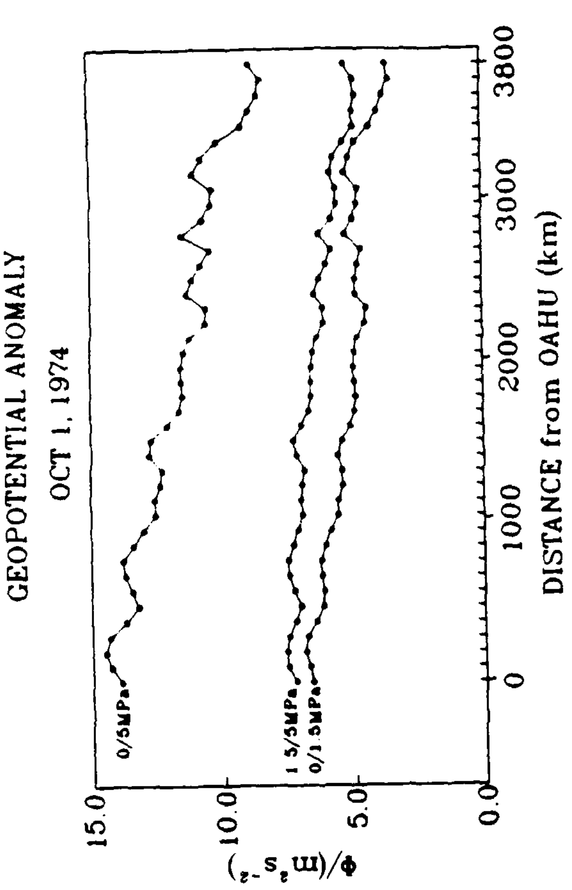
GEOPOTENTIAL ANOMALY
AUG 15, 1974



GEOPOTENTIAL ANOMALY
SEP 1, 1974




GEOPOTENTIAL ANOMALY
SEP 15, 1974
0/5MPa
1.5/5MPa
0/1.5MPa
15.0
10.0
5.0
0.0
$\Phi/(m^2 s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 1, 1974
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1.5/5MPa
0/1.5MPa
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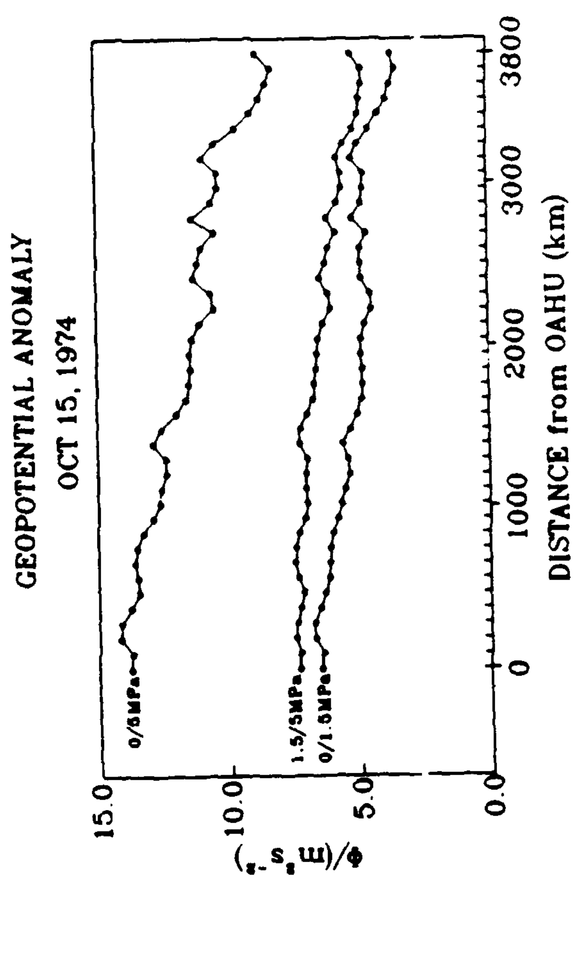
5.0
0.0
$\Phi/(m^2 s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 15, 1974
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1.5/5MPa
0/1.5MPa
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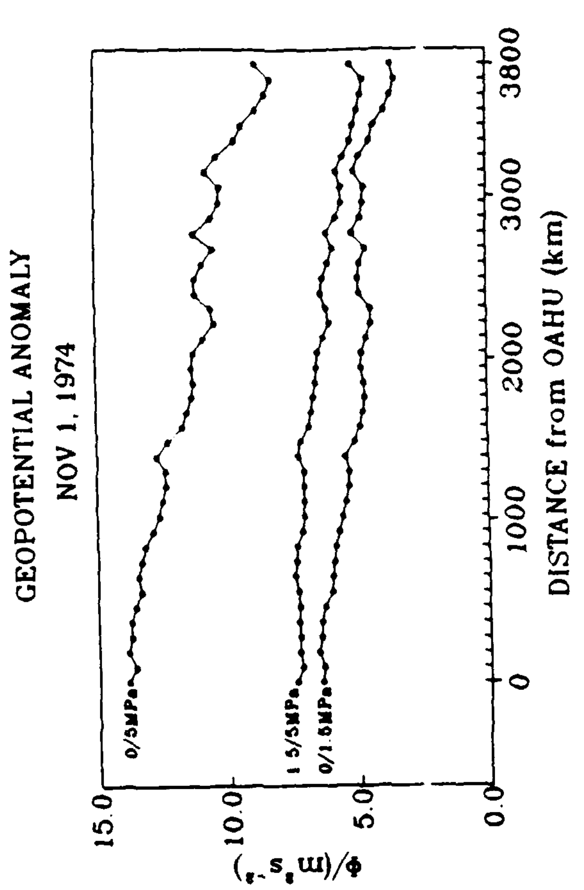
$\Phi/(m^2 s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
NOV 1, 1974
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1.5/5MPa
0/1.5MPa
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5.0
0.0
$\Phi/(m^2 s^{-2})$
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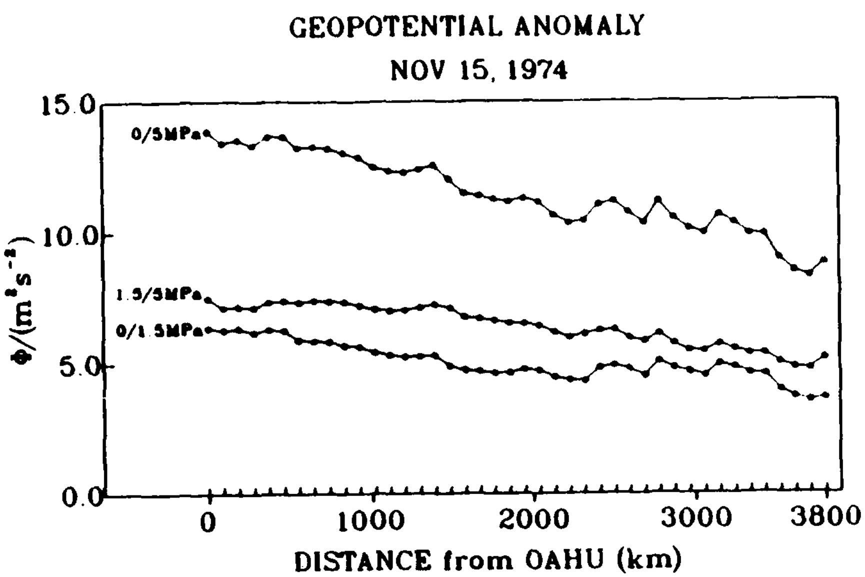
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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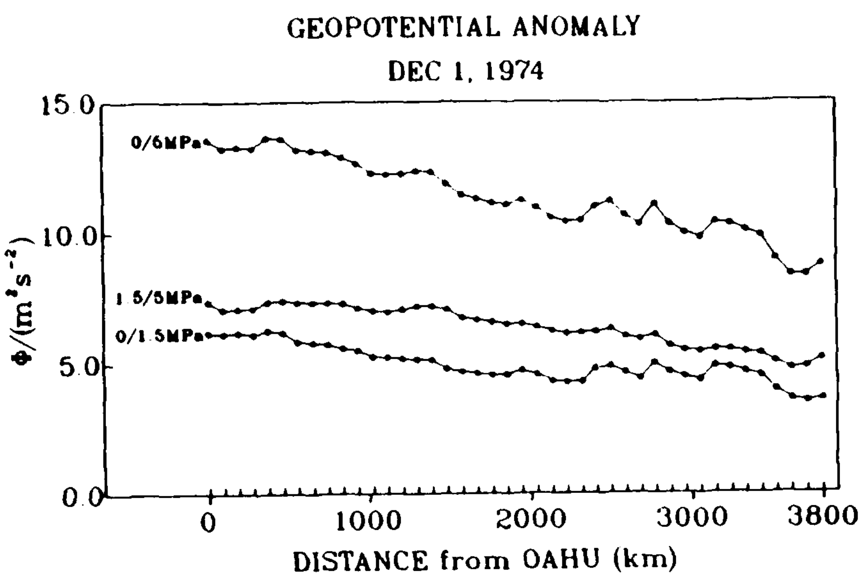
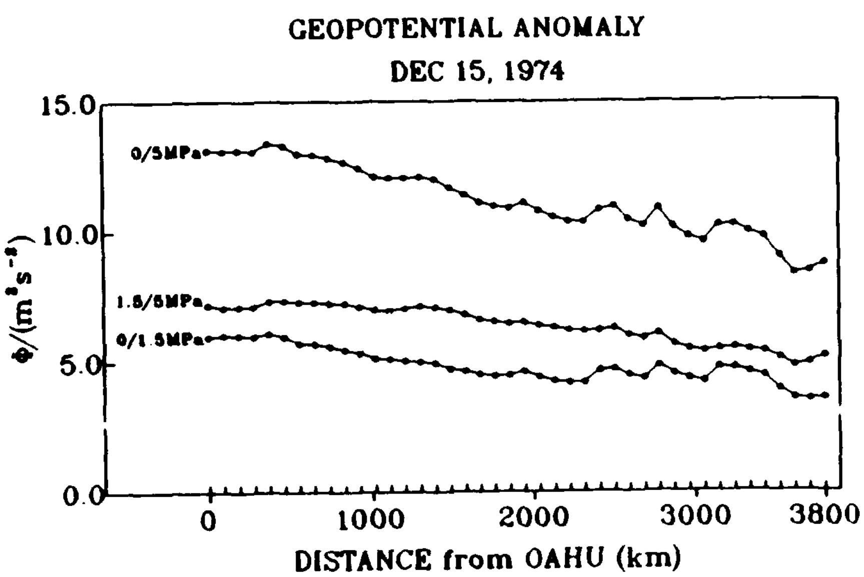
1.5/5MPa
0/1.5MPa
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
DEC 1, 1974
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
DEC 15, 1974
0/5MPa
1.5/5MPa
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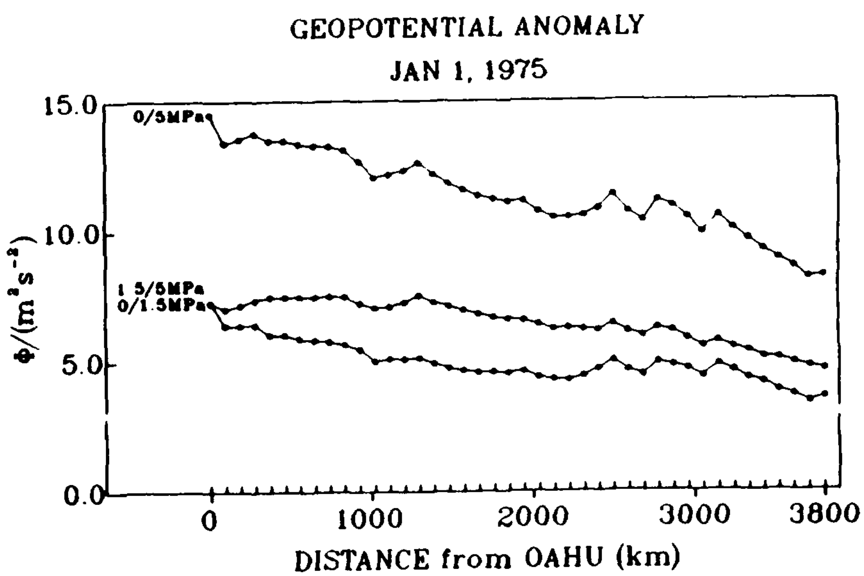
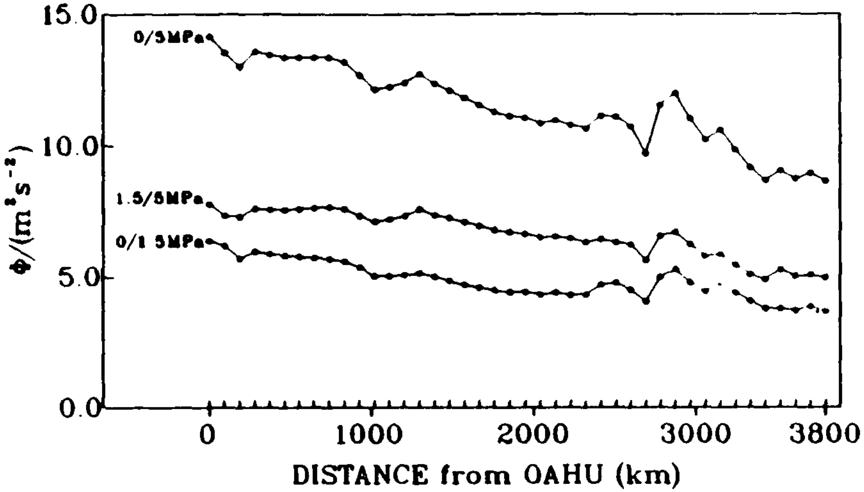
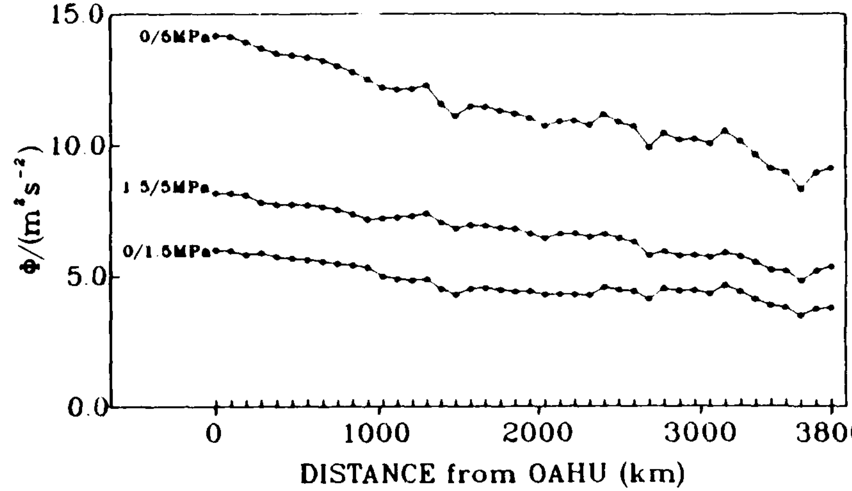
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JAN 1, 1975
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2 s^{-2})$
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
JAN 15, 1975



GEOPOTENTIAL ANOMALY
FEB 1, 1975



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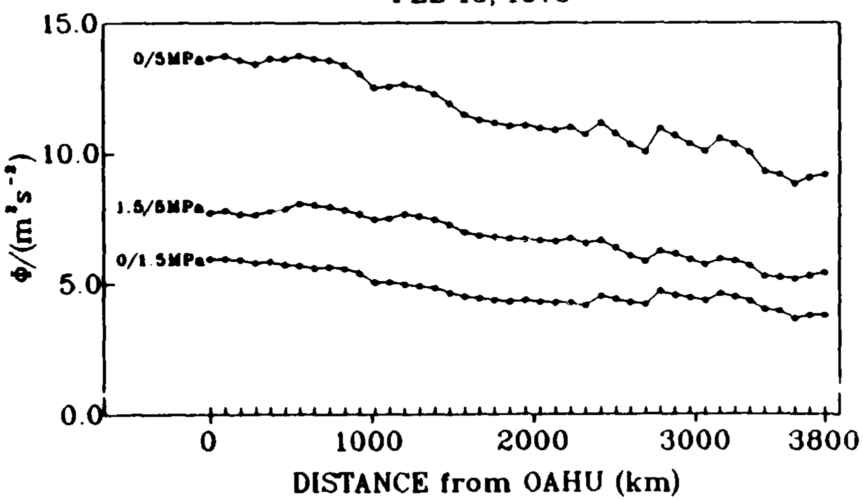
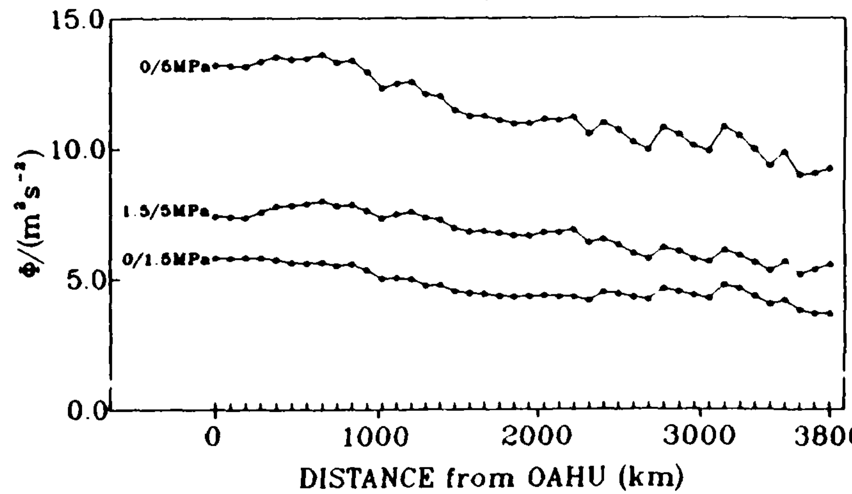
FEB 15, 1975



GEOPOTENTIAL ANOMALY
MAR 1, 1975



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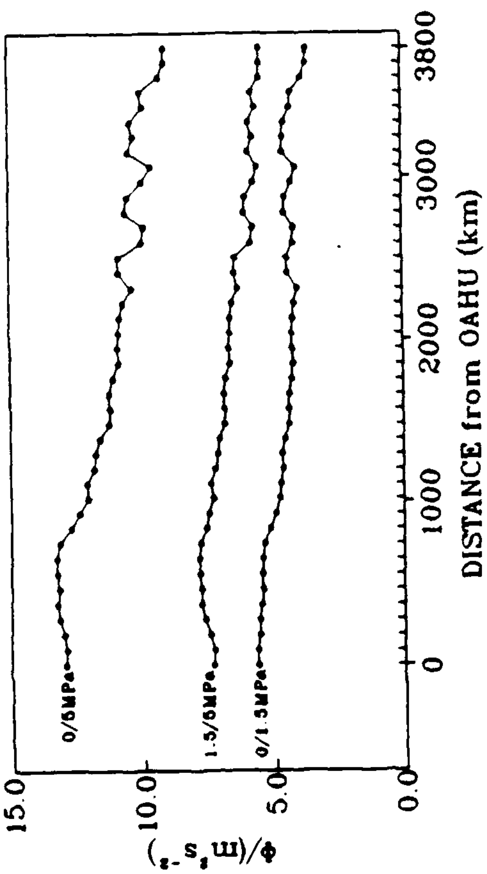
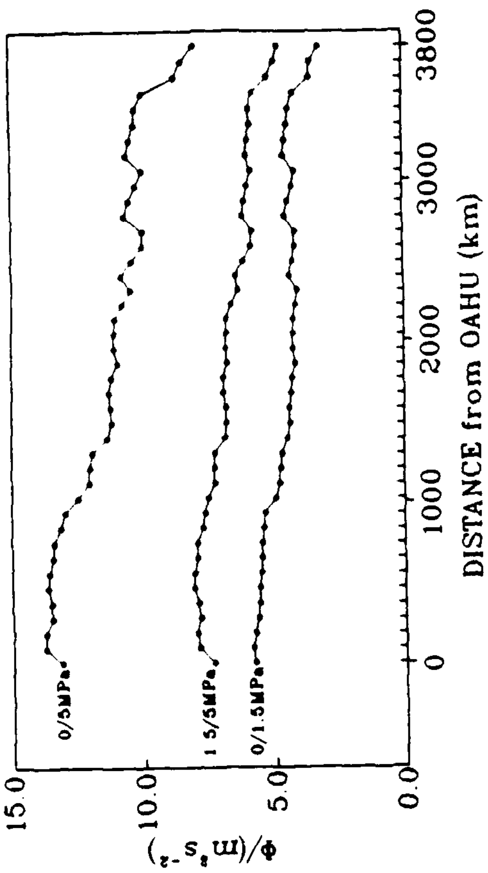
MAR 15, 1975



GEOPOTENTIAL ANOMALY
APR 1, 1975



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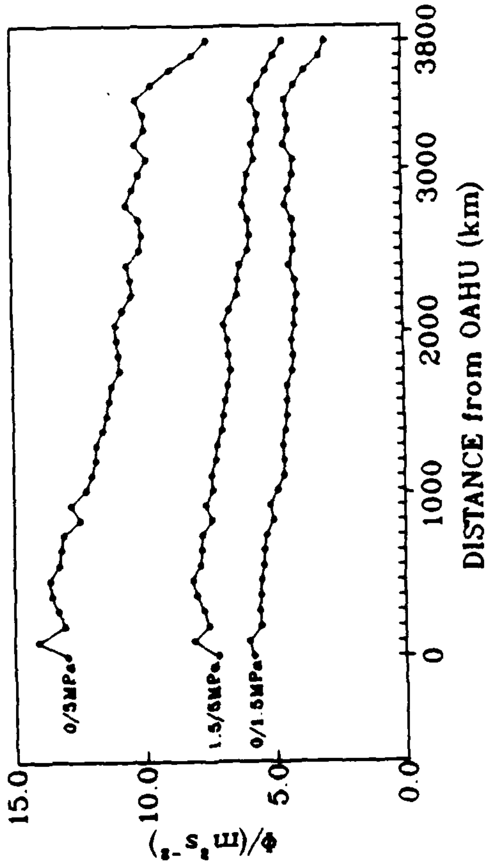
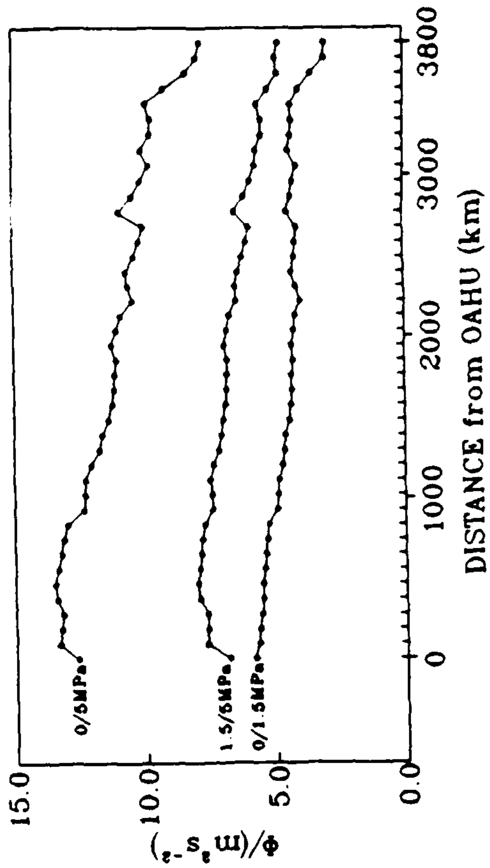
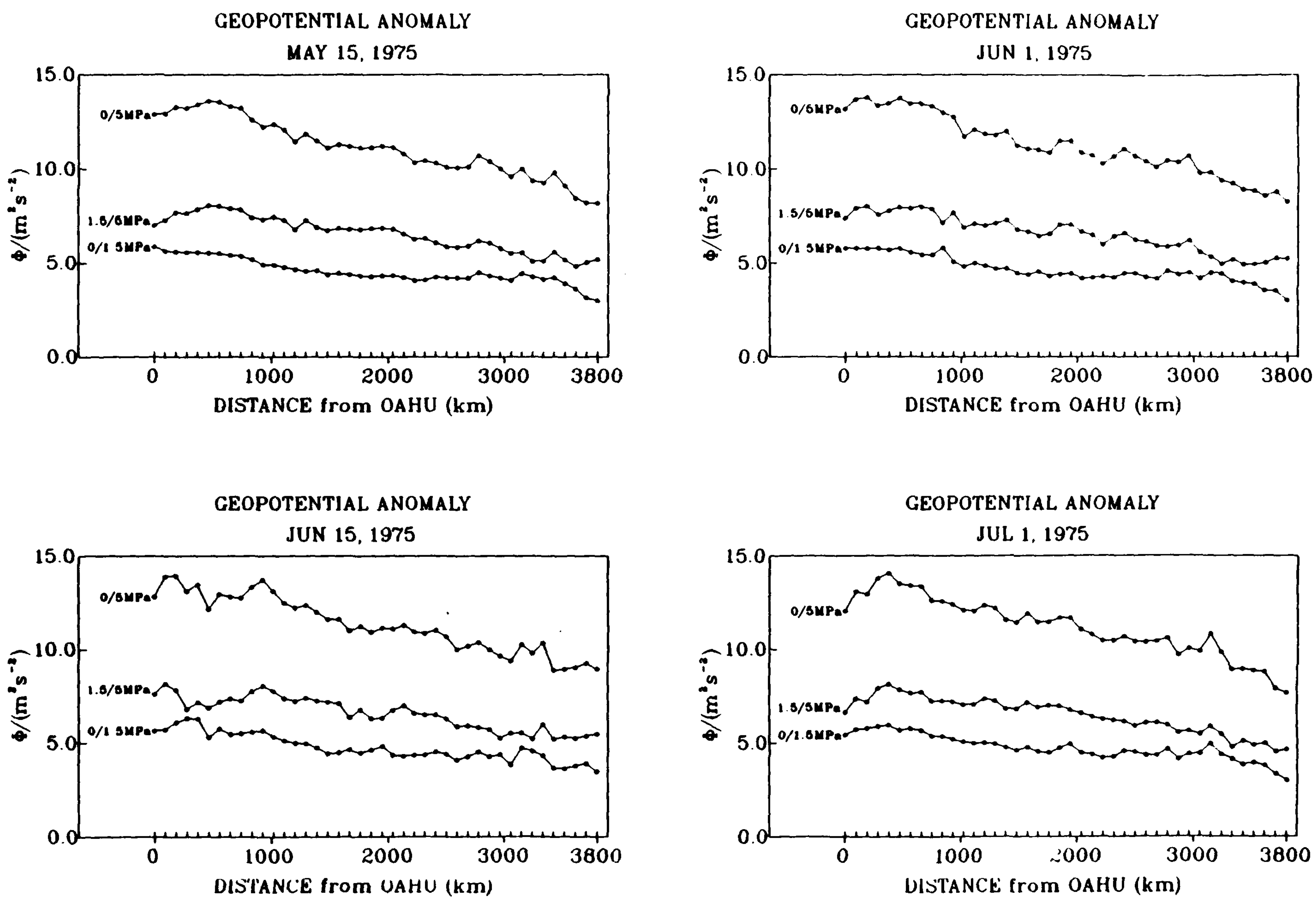
APR 15, 1975



GEOPOTENTIAL ANOMALY
MAY 1, 1975





GEOPOTENTIAL ANOMALY
MAY 15, 1975
0/5MPa
1.5/5MPa
0/1.5MPa
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0
1000
2000
3000
3800
DISTANCE from OAHU (km)
GEOPOTENTIAL ANOMALY
JUN 1, 1975
0/5MPa
1.5/5MPa
0/1.5MPa
Φ/(m²s⁻²)
DISTANCE from OAHU (km)
GEOPOTENTIAL ANOMALY
JUN 15, 1975
0/5MPa
1.5/5MPa
0/1.5MPa
Φ/(m²s⁻²)
DISTANCE from OAHU (km)
GEOPOTENTIAL ANOMALY
JUL 1, 1975
0/5MPa
1.5/5MPa
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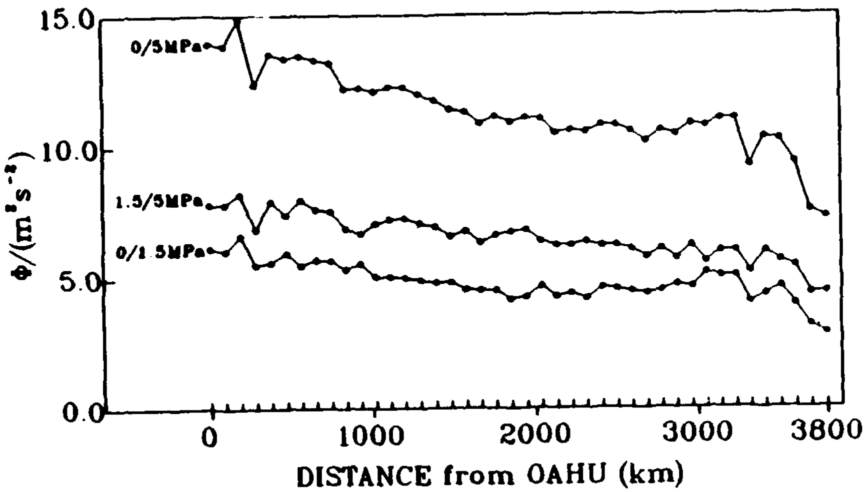
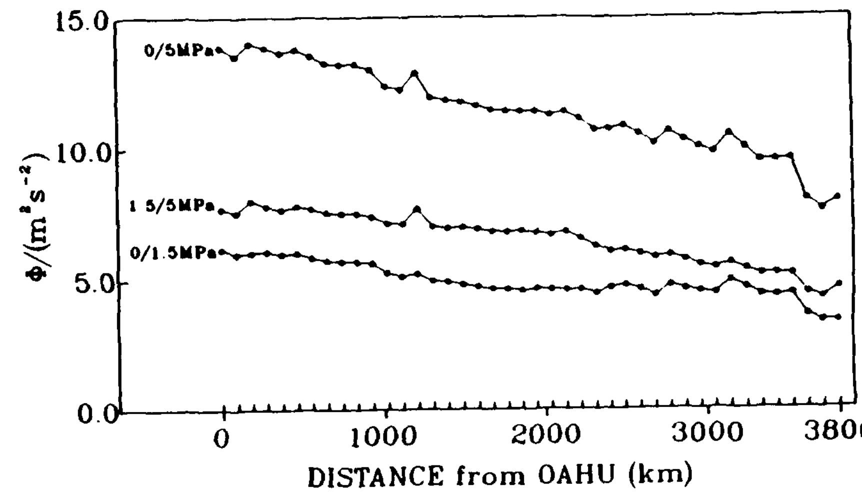
Φ/(m²s⁻²)
DISTANCE from OAHU (km)

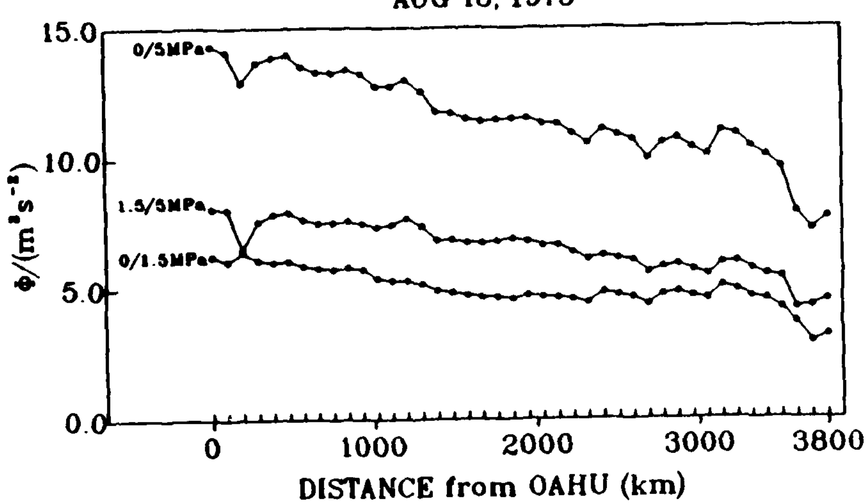
GEOPOTENTIAL ANOMALY
JUL 15, 1975



GEOPOTENTIAL ANOMALY
AUG 1, 1975



GEOPOTENTIAL ANOMALY
AUG 15, 1975



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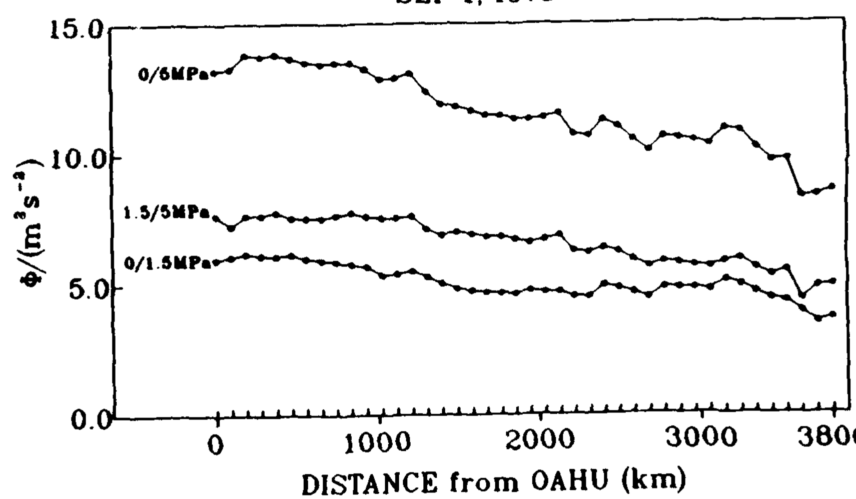
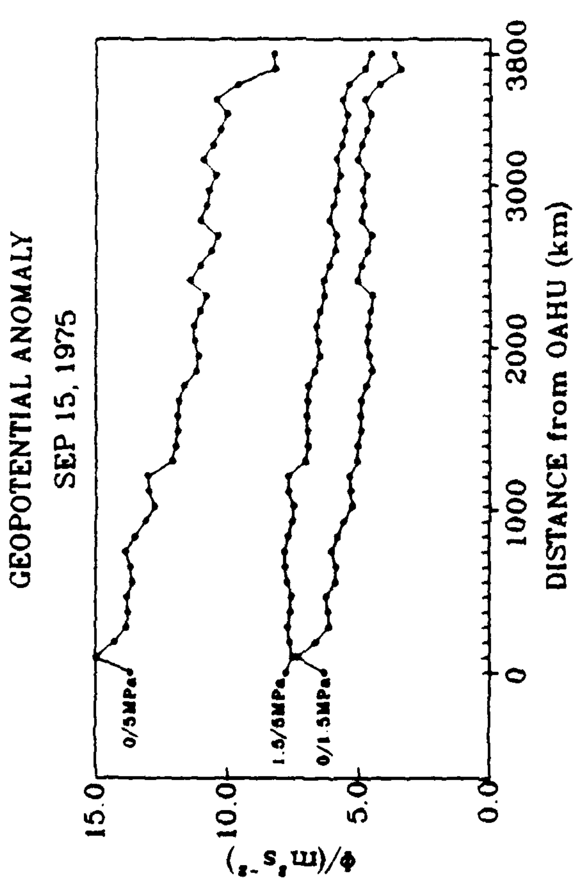
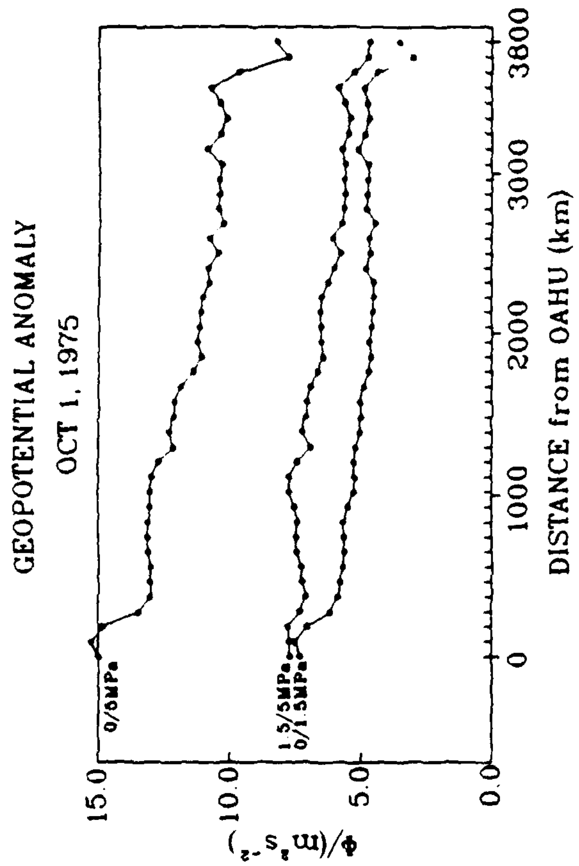
SEP 1, 1975




GEOPOTENTIAL ANOMALY
SEP 15, 1975
0/5MPa
1.5/5MPa
0/1.5MPa
Φ/(m²s⁻²)
15.0
10.0
5.0
0.0
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
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0/1.5MPa
Φ/(m²s⁻²)
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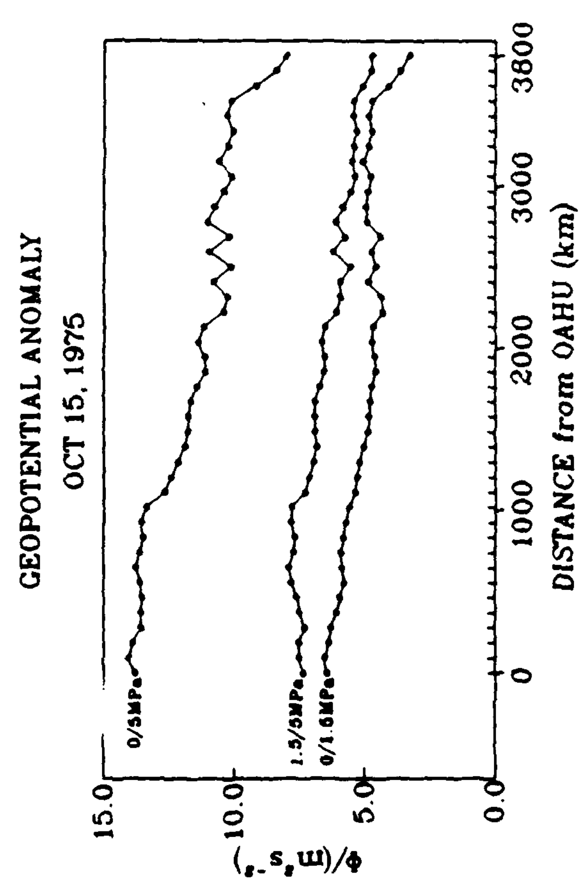
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 15, 1975
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1.5/5MPa
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Φ/(m²s⁻²)
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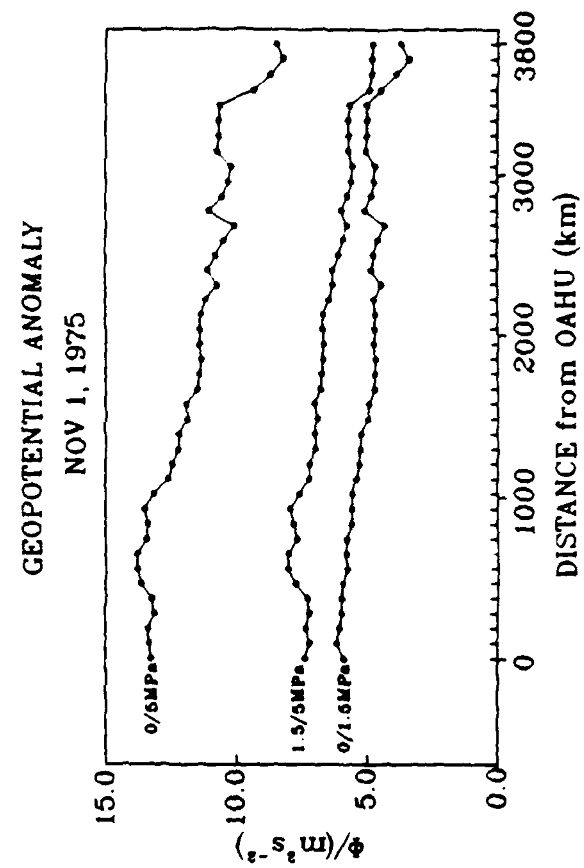
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
NOV 1, 1975
0/5MPa
1.5/5MPa
0/1.5MPa
Φ/(m²s⁻²)
15.0
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0
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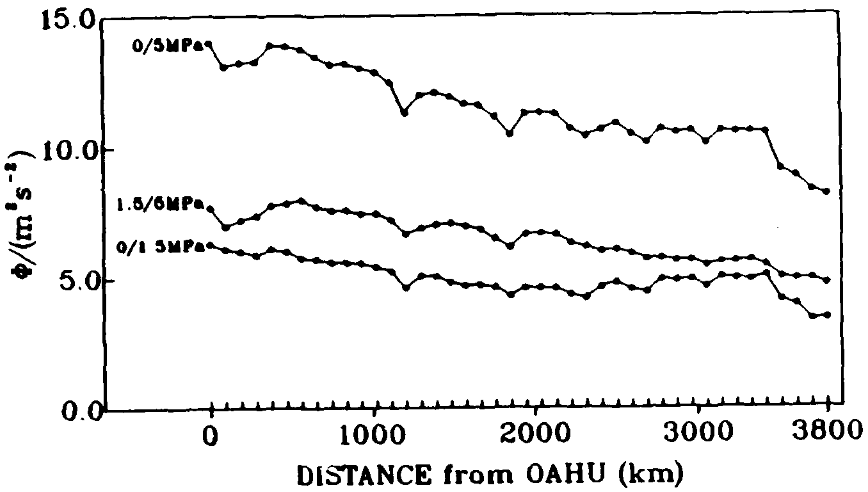
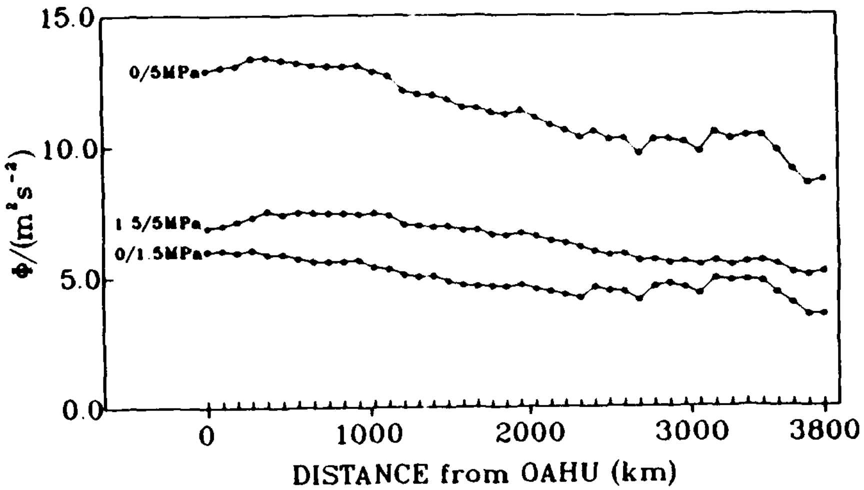
2000
3000
3800
DISTANCE from OAHU (km)

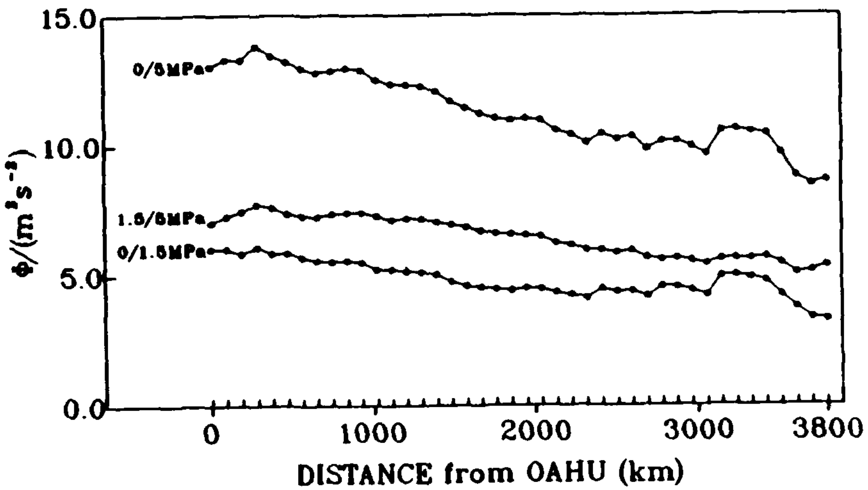
GEOPOTENTIAL ANOMALY
NOV 15, 1975



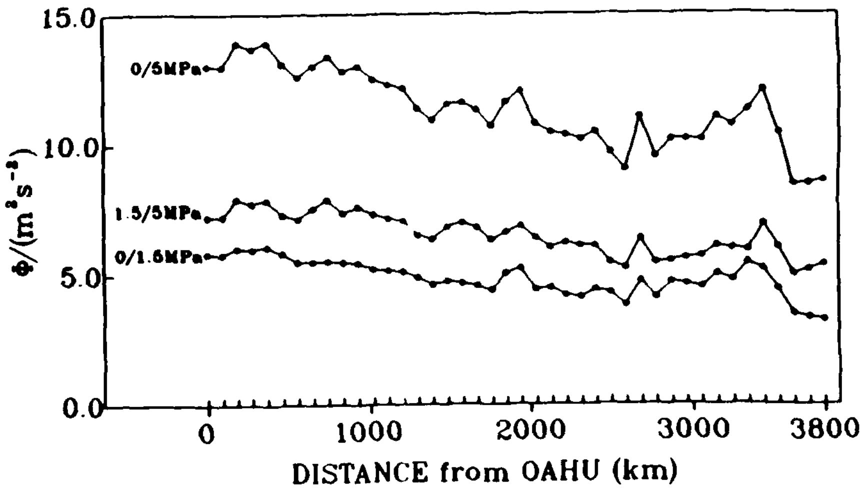
GEOPOTENTIAL ANOMALY
DEC 1, 1975

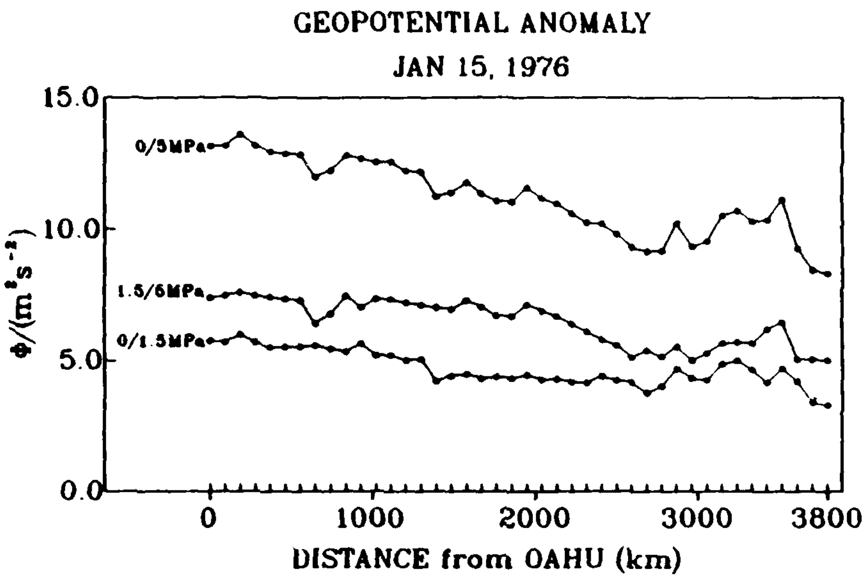


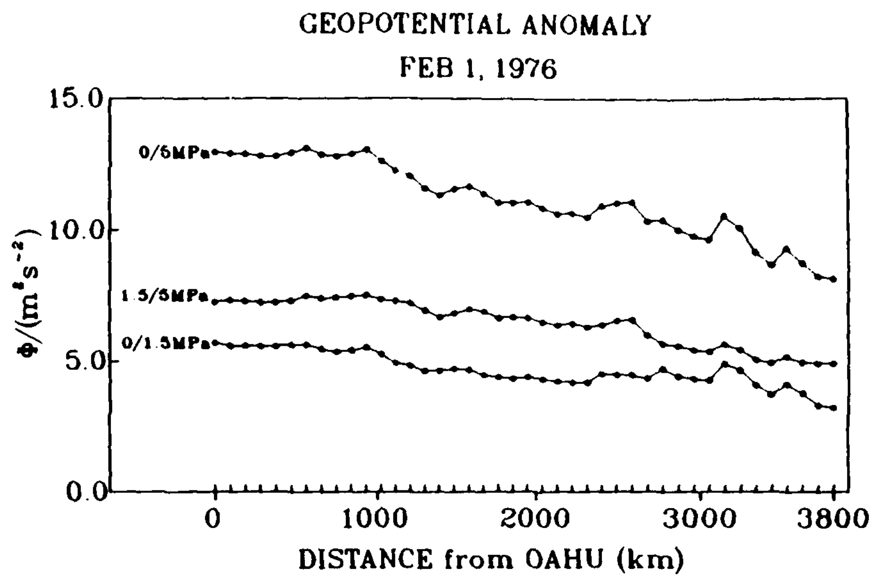
GEOPOTENTIAL ANOMALY
DEC 15, 1975



GEOPOTENTIAL ANOMALY
JAN 1, 1976




GEOPOTENTIAL ANOMALY
JAN 15, 1976
0/5MPa
1.5/5MPa
0/1.5MPa
15.0
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 1, 1976
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1.5/5MPa
0/1.5MPa
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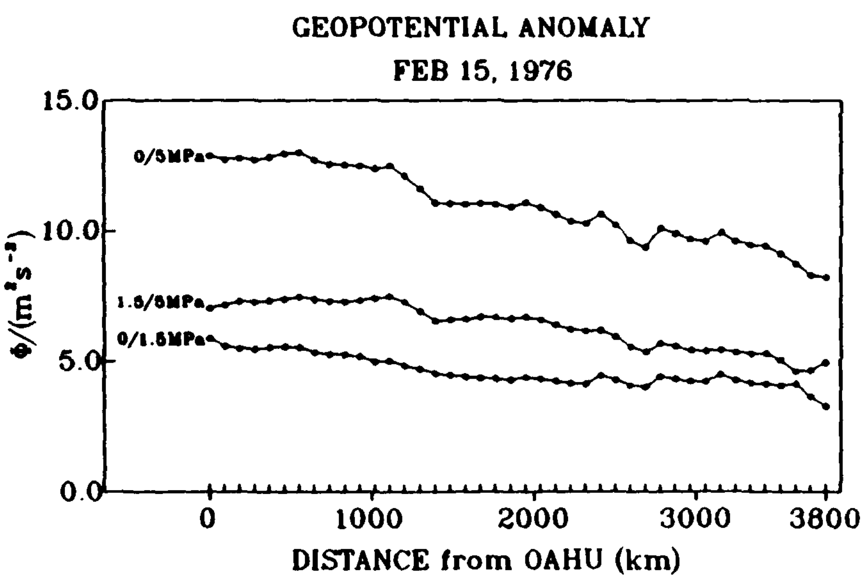
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 15, 1976
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1.5/5MPa
0/1.5MPa
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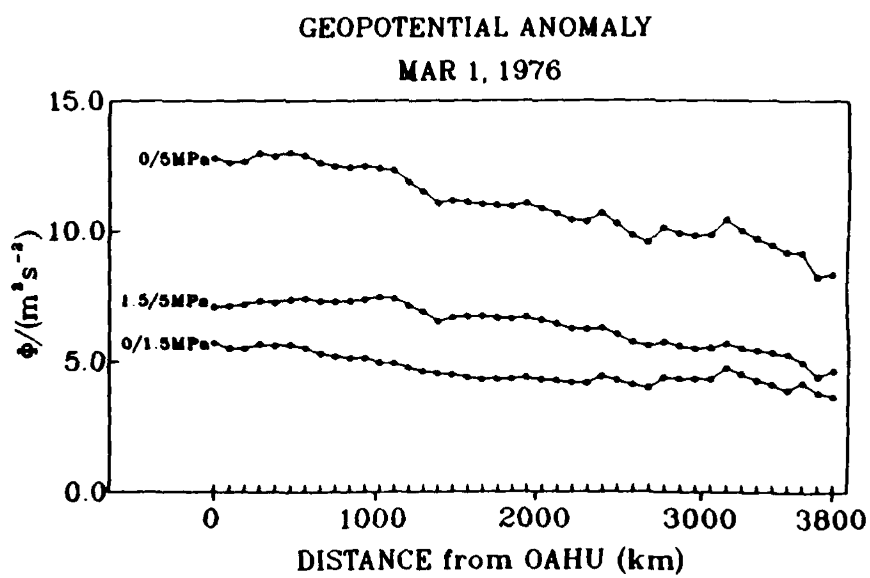
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAR 1, 1976
0/5MPa
1.5/5MPa
0/1.5MPa
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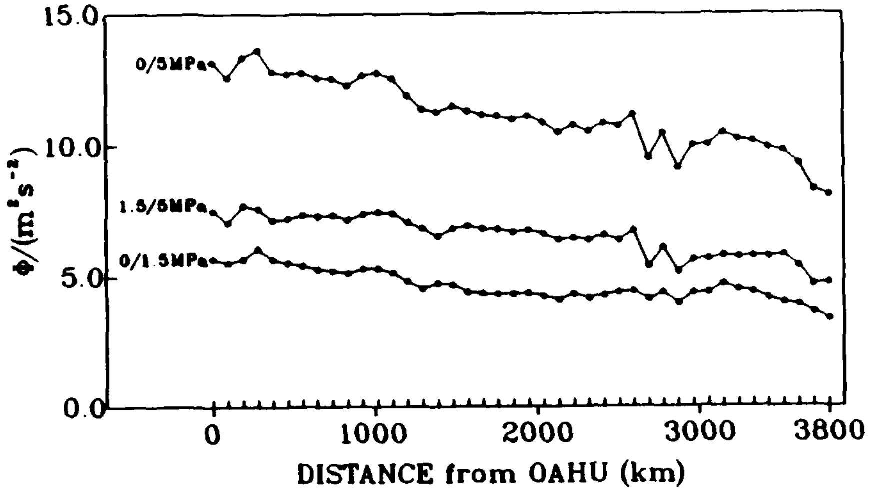
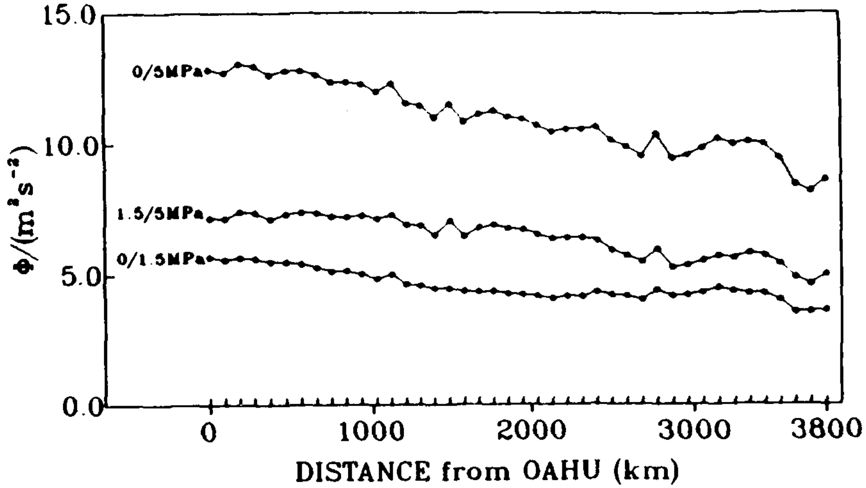
10.0
5.0
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

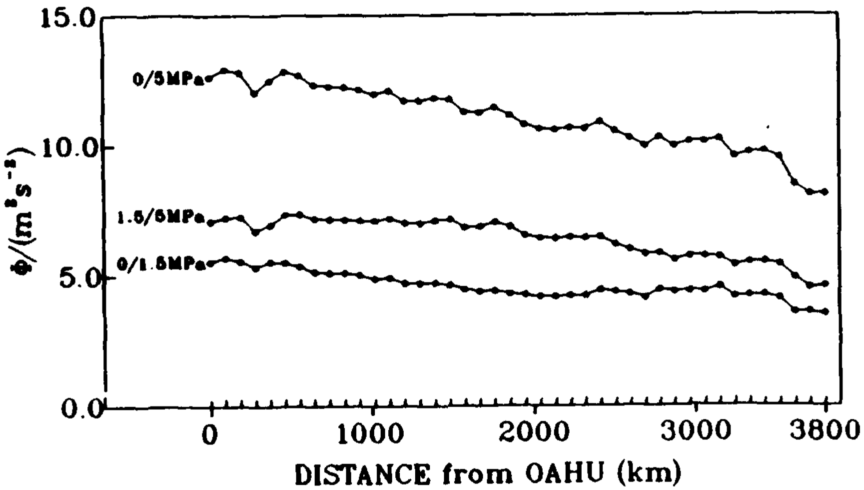
GEOPOTENTIAL ANOMALY
MAR 15, 1976



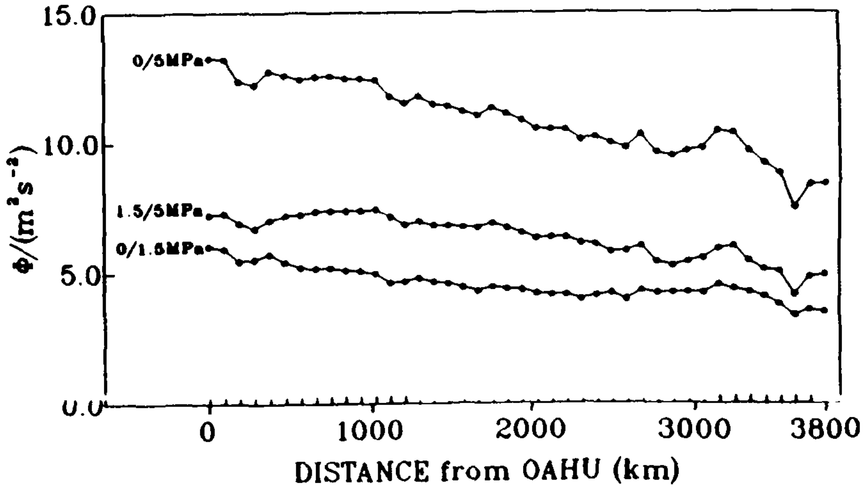
GEOPOTENTIAL ANOMALY
APR 1, 1976



GEOPOTENTIAL ANOMALY
APR 15, 1976



GEOPOTENTIAL ANOMALY
MAY 1, 1976



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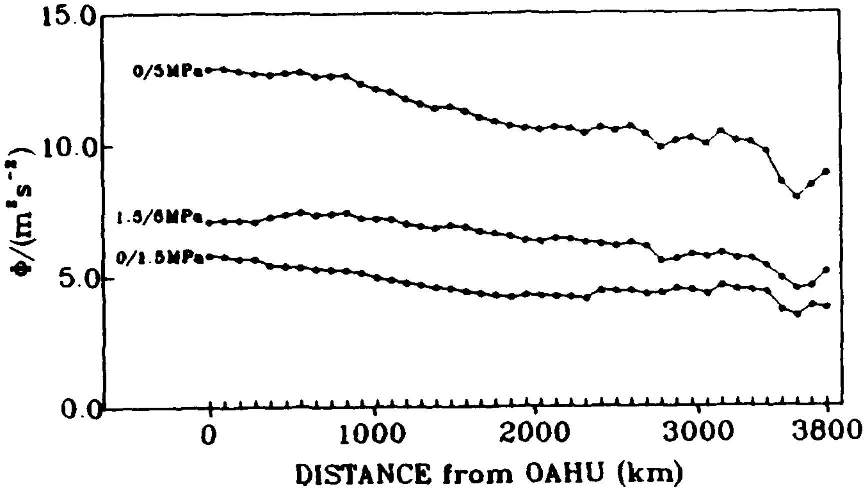
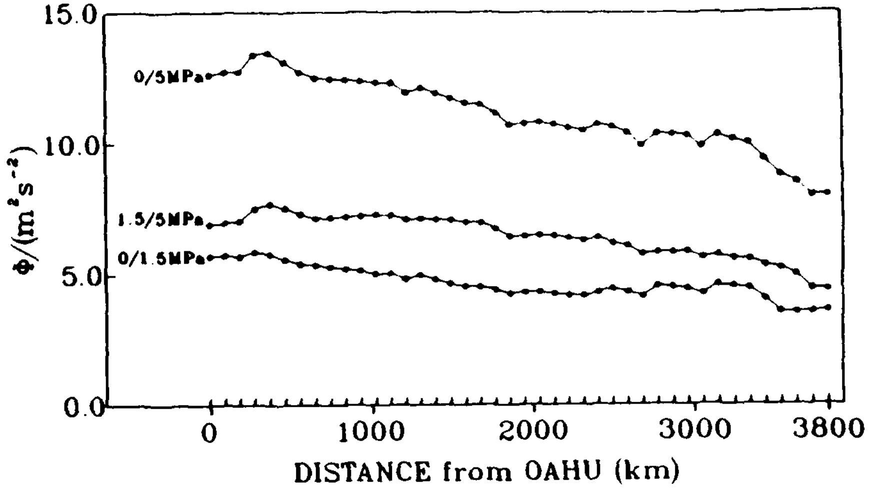
MAY 15, 1976



GEOPOTENTIAL ANOMALY
JUN 1, 1976



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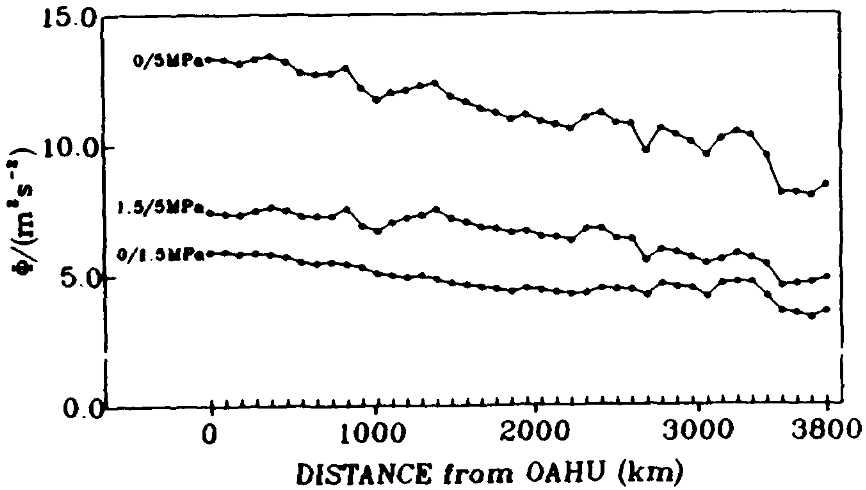
JUN 15, 1976



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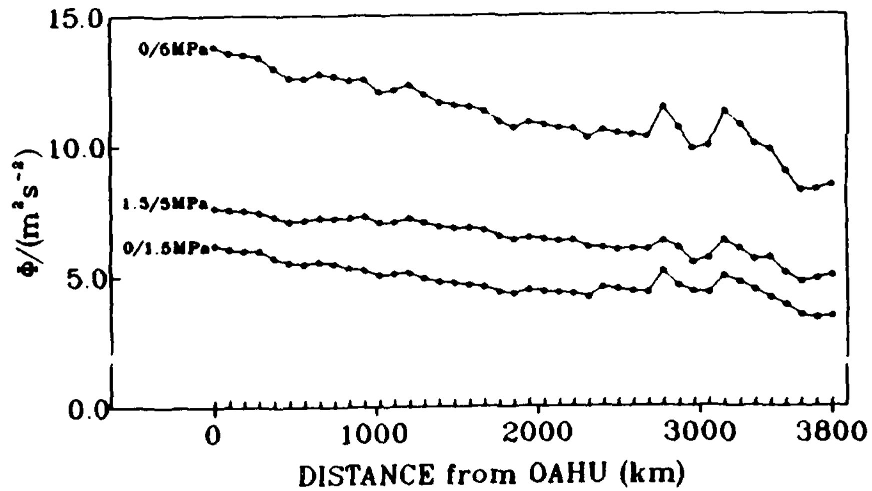
JUL 1, 1976



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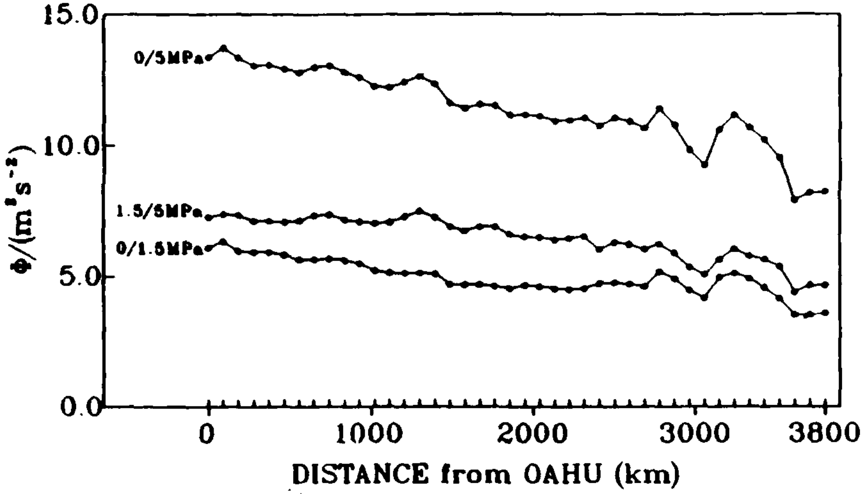

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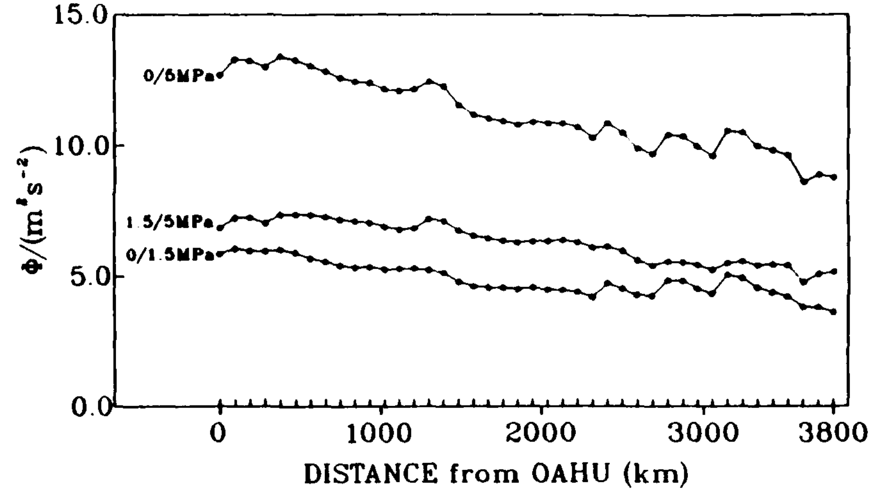
AUG 1, 1976



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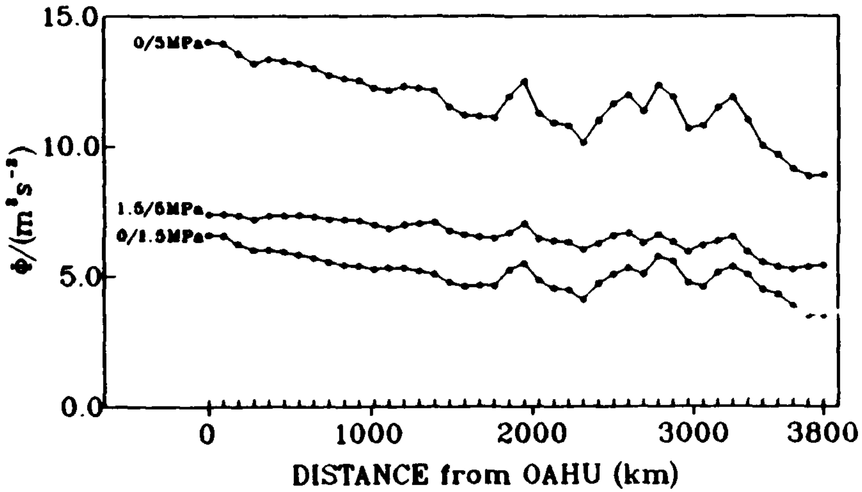

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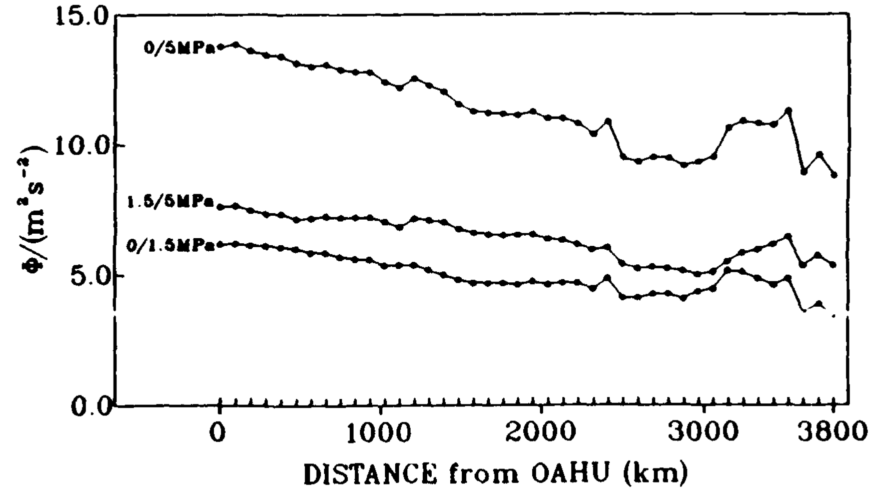
SEP 1, 1976



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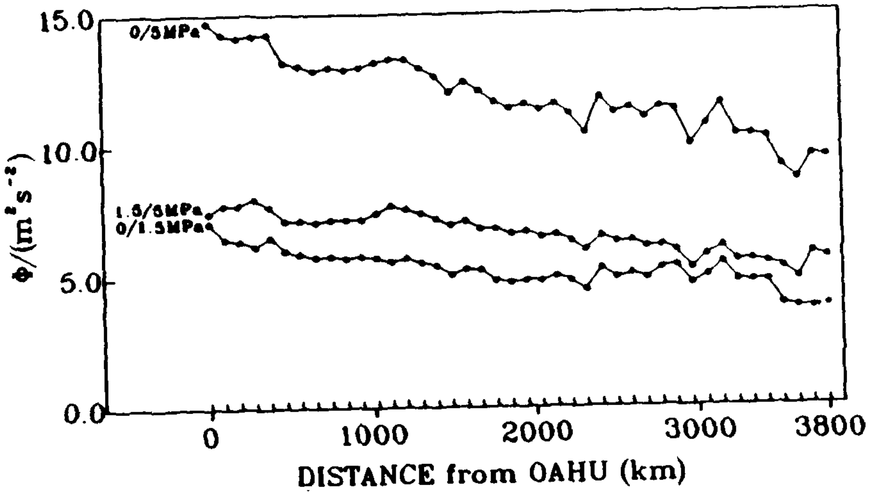
SEP 15, 1976



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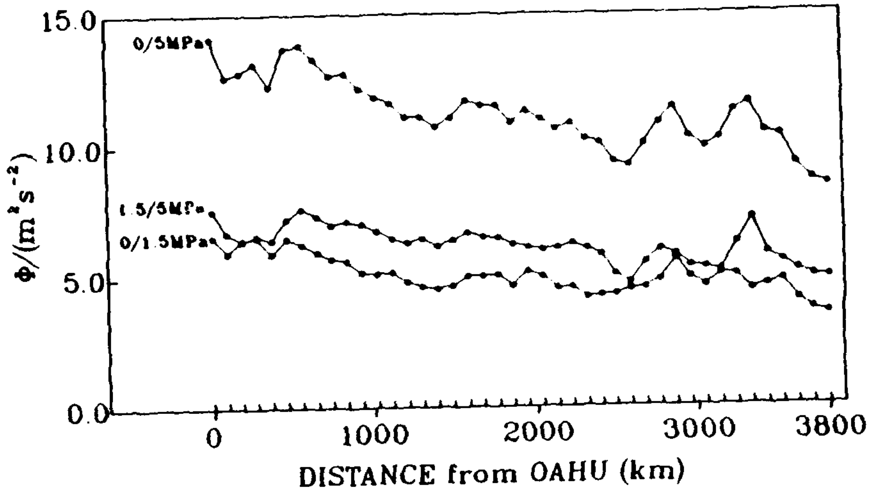

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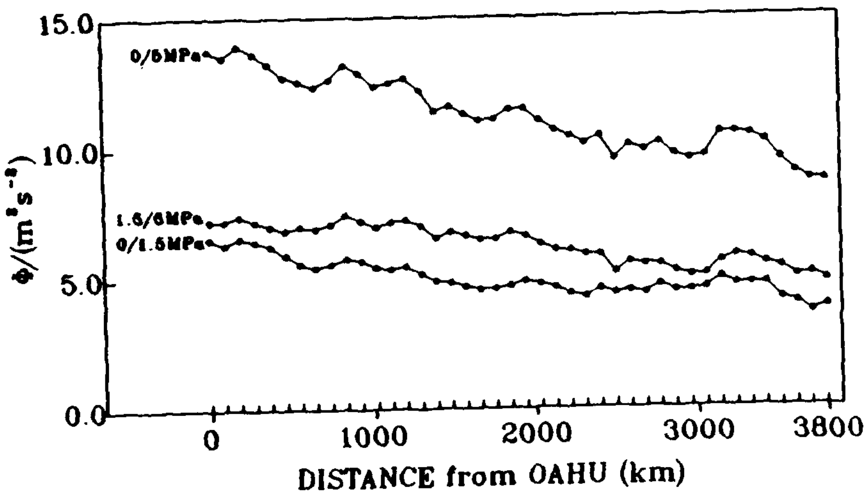
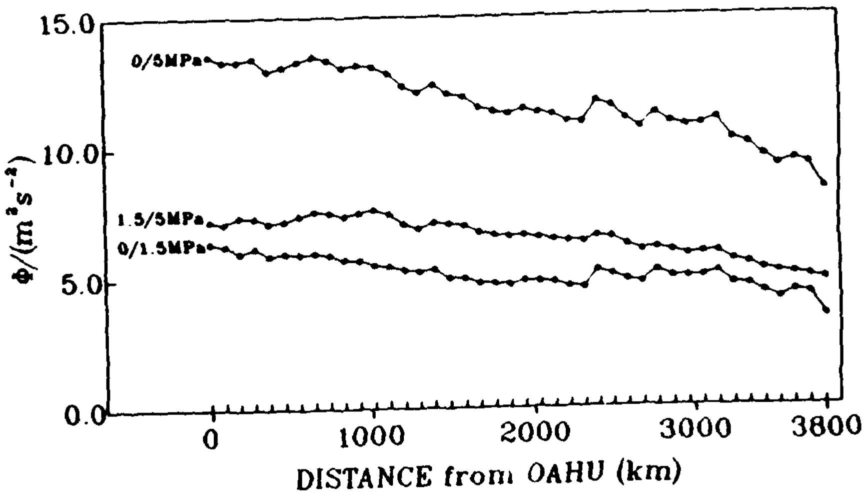
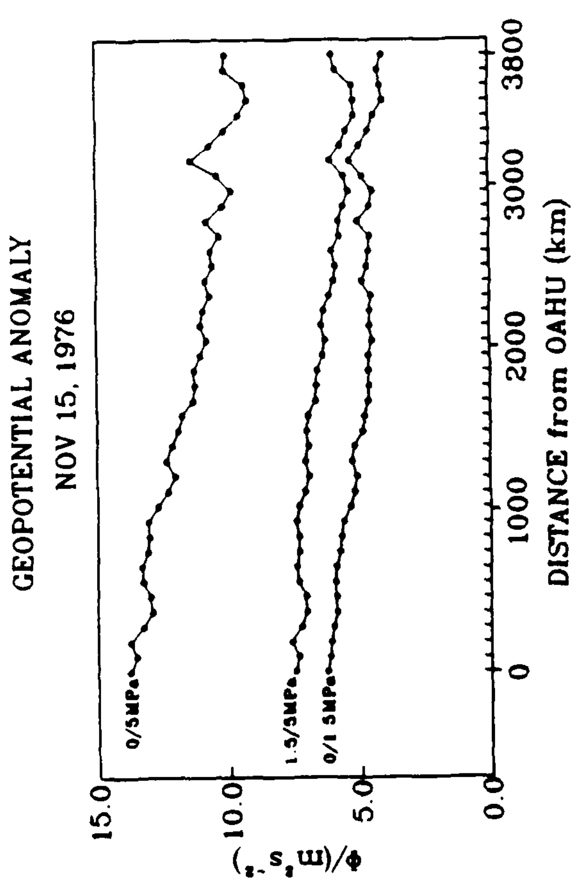
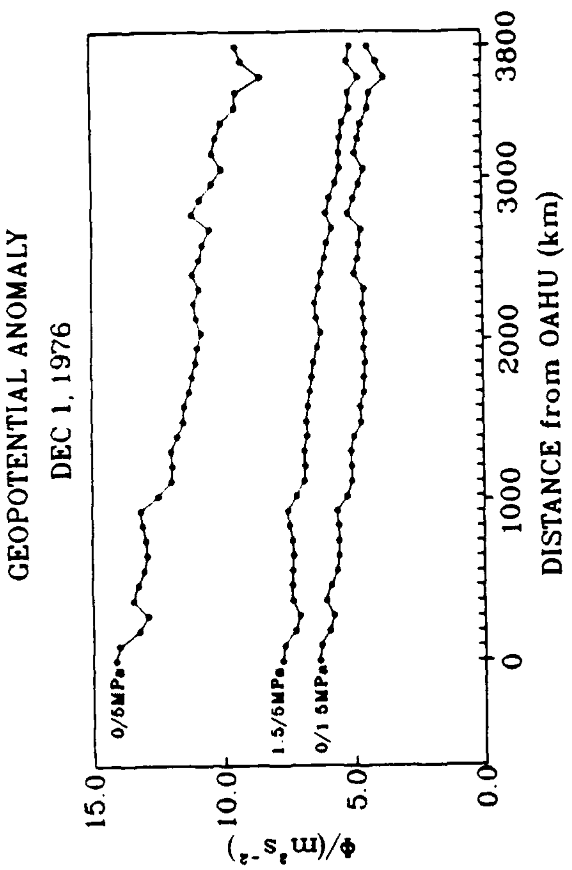


GEOPOTENTIAL ANOMALY
NOV 1, 1976




GEOPOTENTIAL ANOMALY
NOV 15, 1976
0/5MPa
1.5/5MPa
0/1.5MPa
15.0
10.0
5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
DEC 1, 1976
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1.5/5MPa
0/1.5MPa
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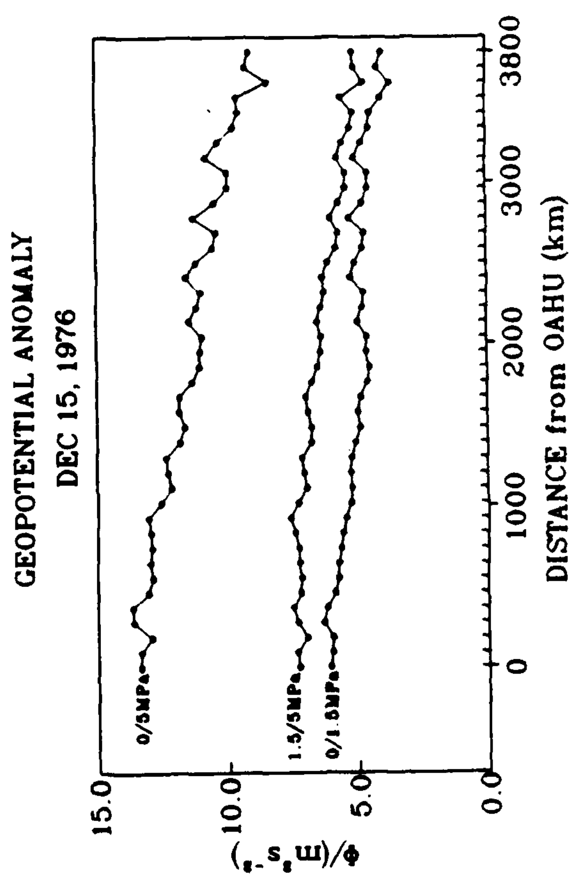
10.0
5.0
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
DEC 15, 1976
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1.5/5MPa
0/1.5MPa
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Φ/(m²s⁻²)
0
1000
2000
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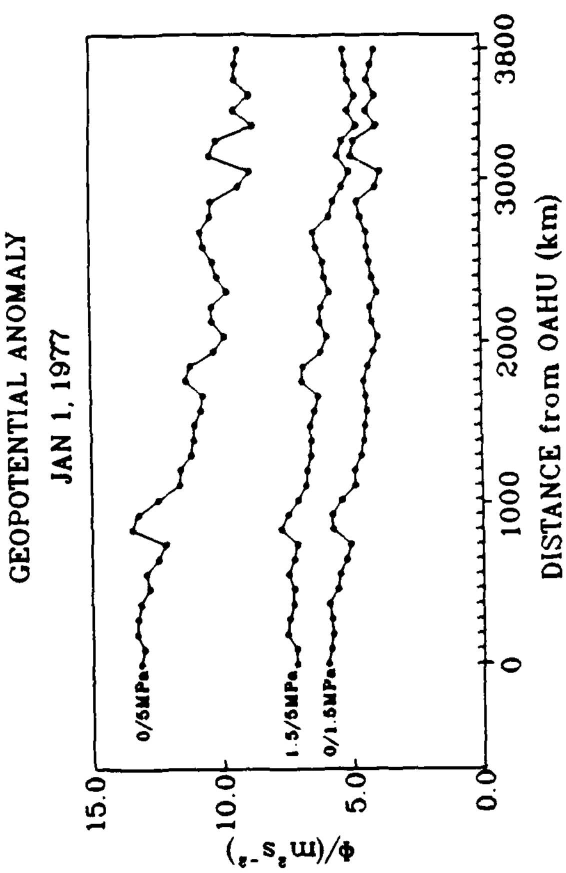
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JAN 1, 1977
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1.5/5MPa
0/1.5MPa
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0.0
Φ/(m²s⁻²)
0
1000
2000
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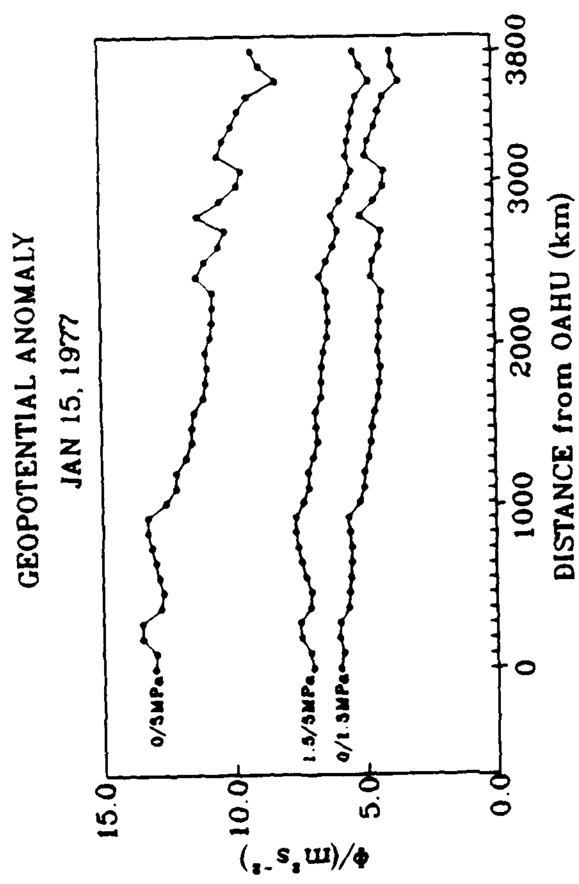
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JAN 15, 1977
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1.5/5MPa
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Φ/(m²s⁻²)
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1000
2000
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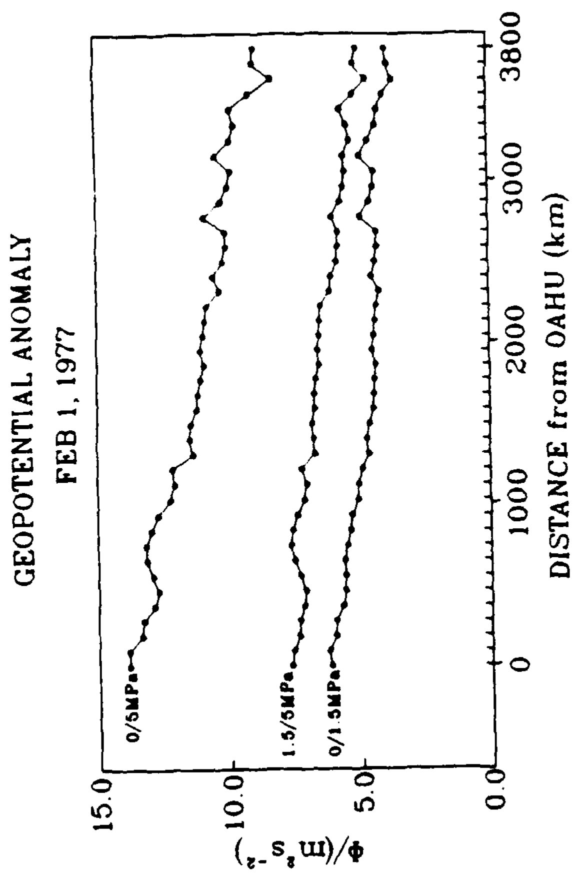
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 1, 1977
0/5MPa
1.5/5MPa
0/1.5MPa
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5.0
0.0
Φ/(m²s⁻²)
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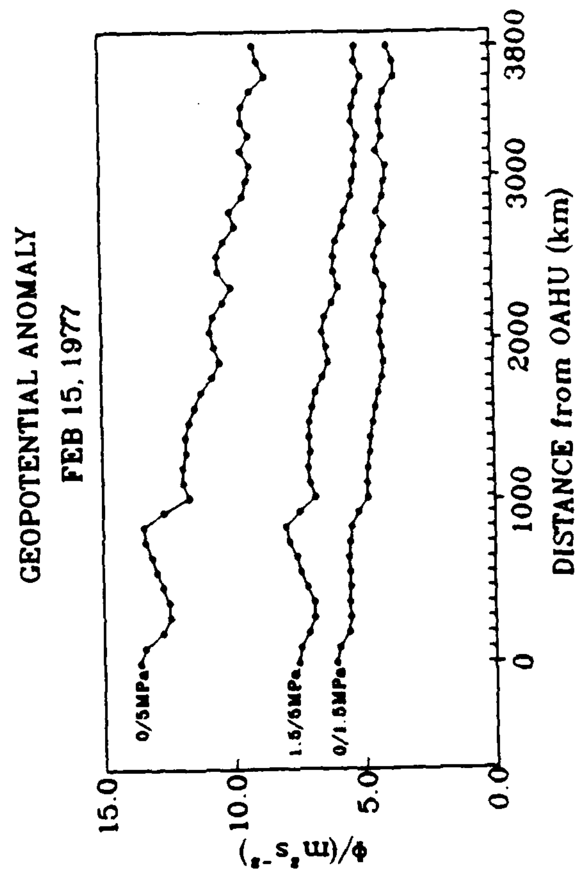
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 15, 1977
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1.5/5MPa
0/1.5MPa
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Φ/(m²s⁻²)
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1000
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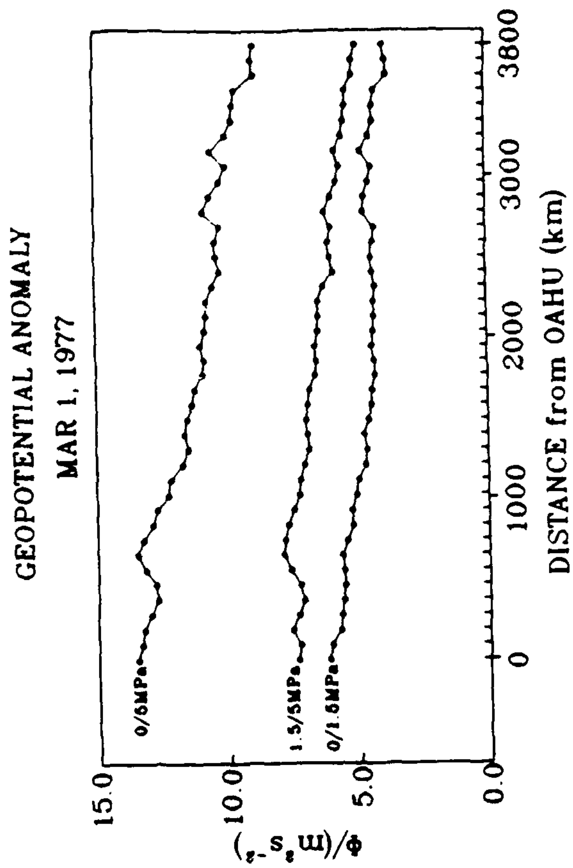
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAR 1, 1977
0/5MPa
1.5/5MPa
0/1.5MPa
15.0
10.0
5.0
0.0
Φ/(m²s⁻²)
0
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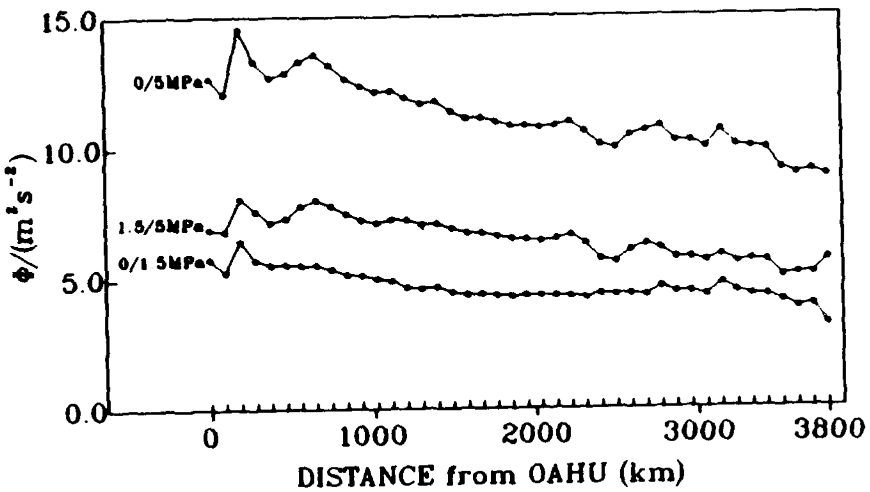
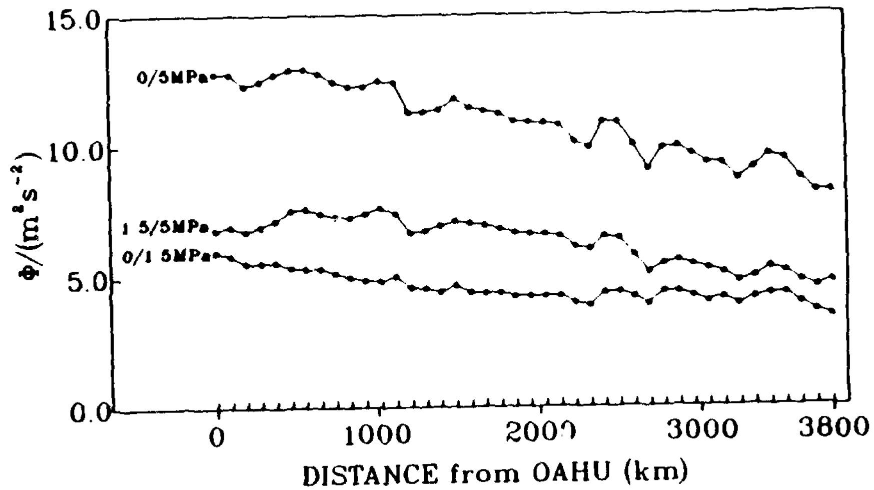
2000
3000
3800
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
MAR 15, 1977



GEOPOTENTIAL ANOMALY
APR 1, 1977



GEOPOTENTIAL ANOMALY
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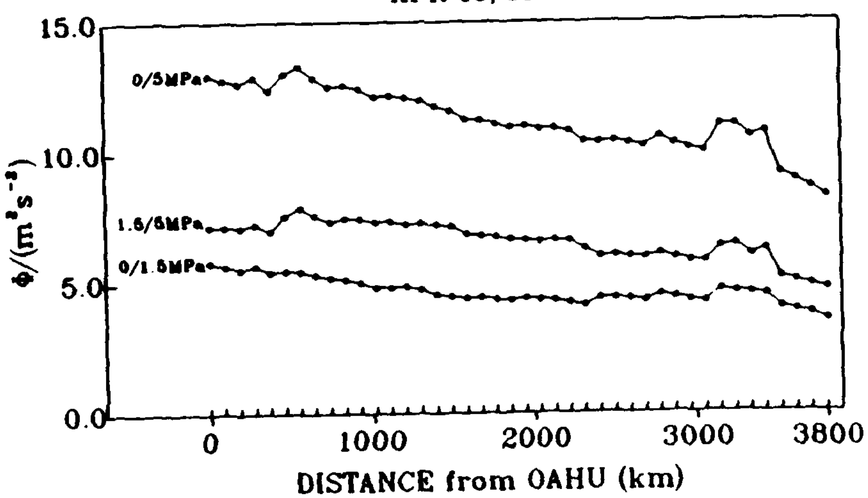

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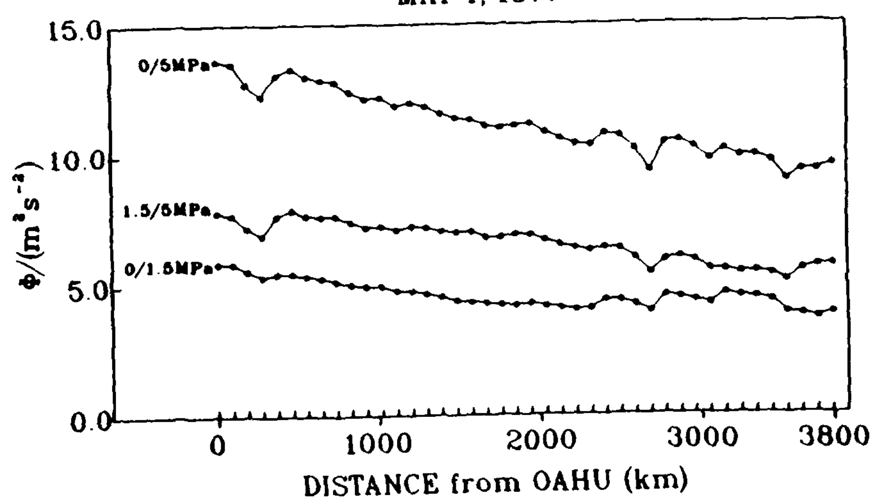
MAY 1, 1977



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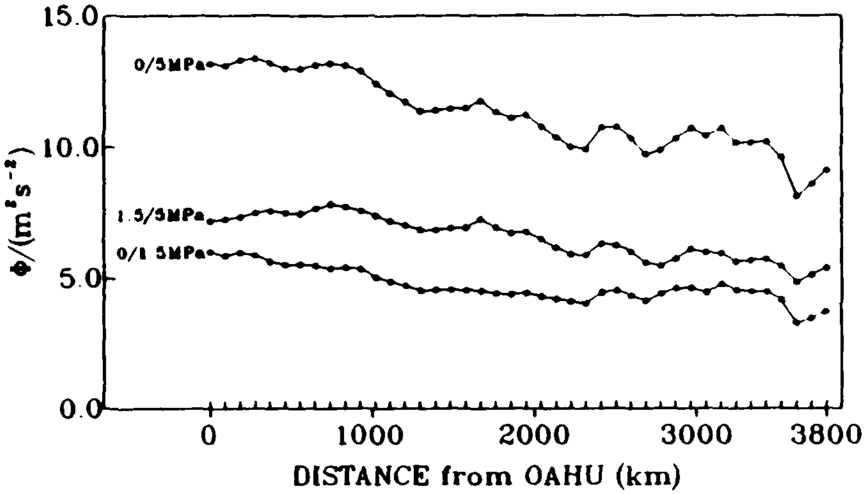
MAY 15, 1977



GEOPOTENTIAL ANOMALY
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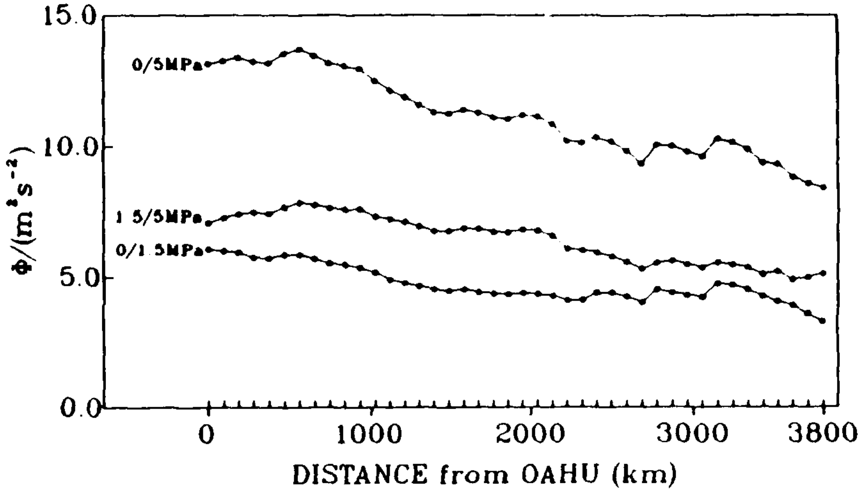

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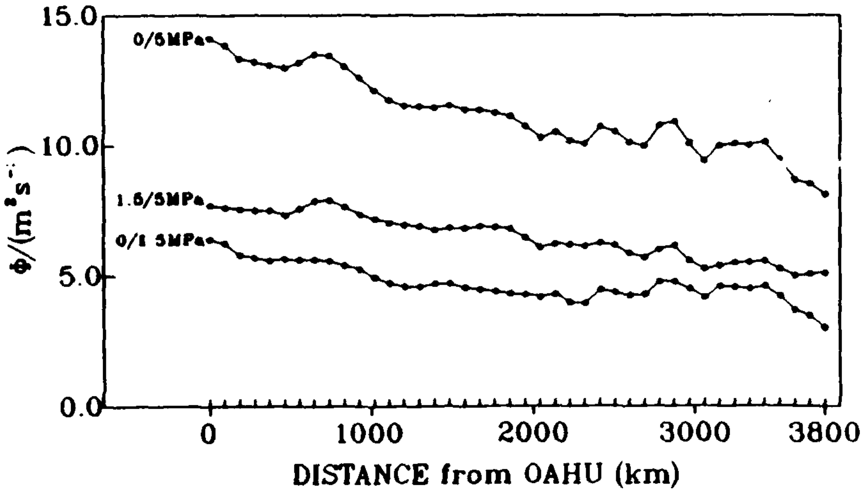

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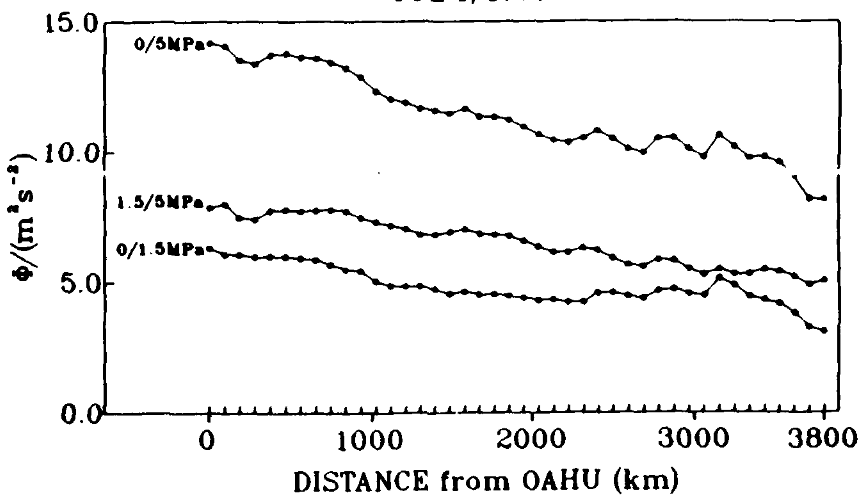
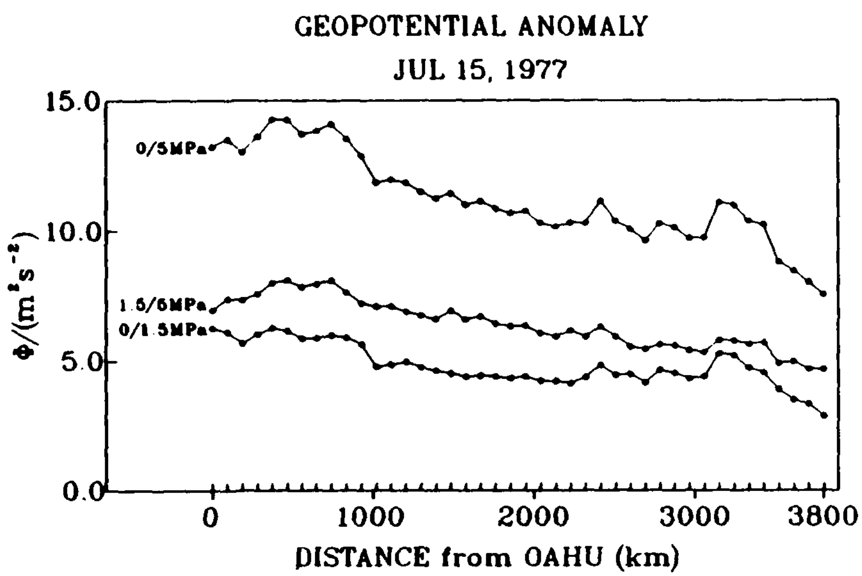
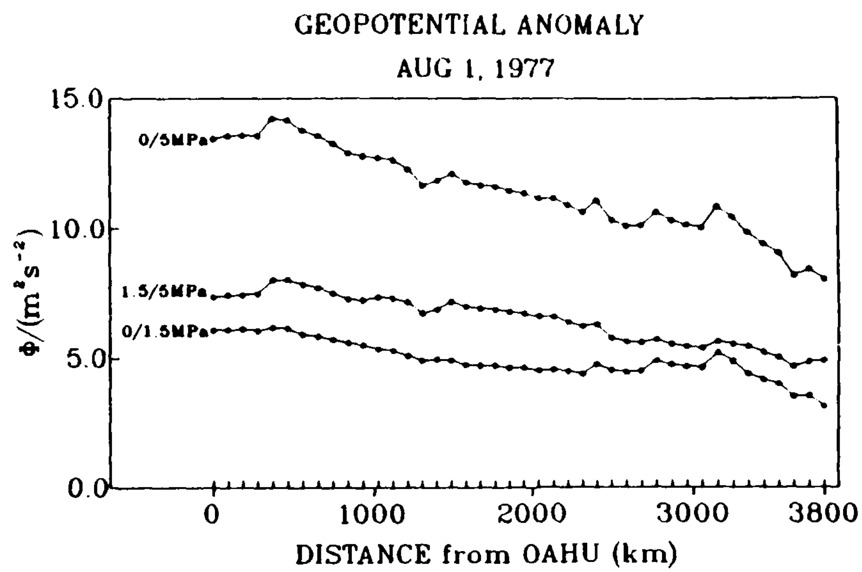
JUL 1, 1977




GEOPOTENTIAL ANOMALY
JUL 15, 1977
$\Phi/(m^2s^{-2})$
0/5MPa
1.5/5MPa
0/1.5MPa
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
AUG 1, 1977
$\Phi/(m^2s^{-2})$
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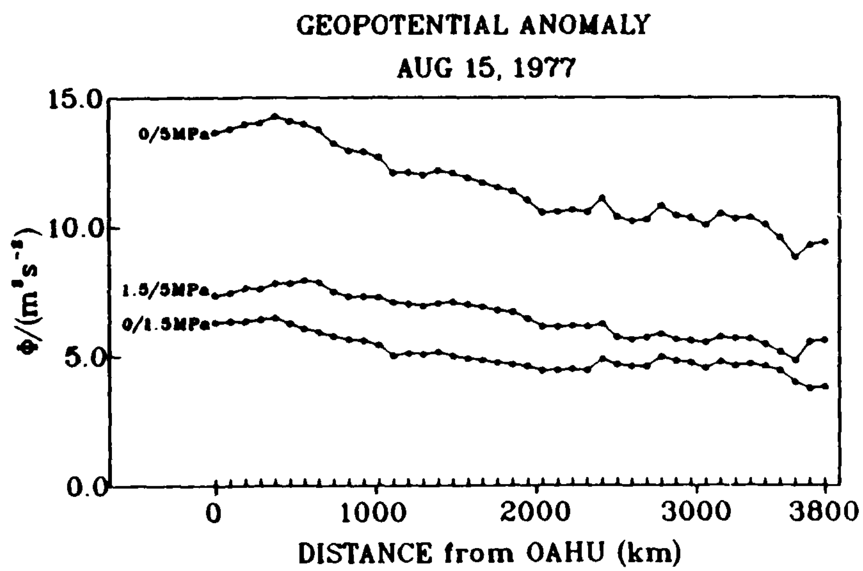
1.5/5MPa
0/1.5MPa
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
AUG 15, 1977
$\Phi/(m^2s^{-2})$
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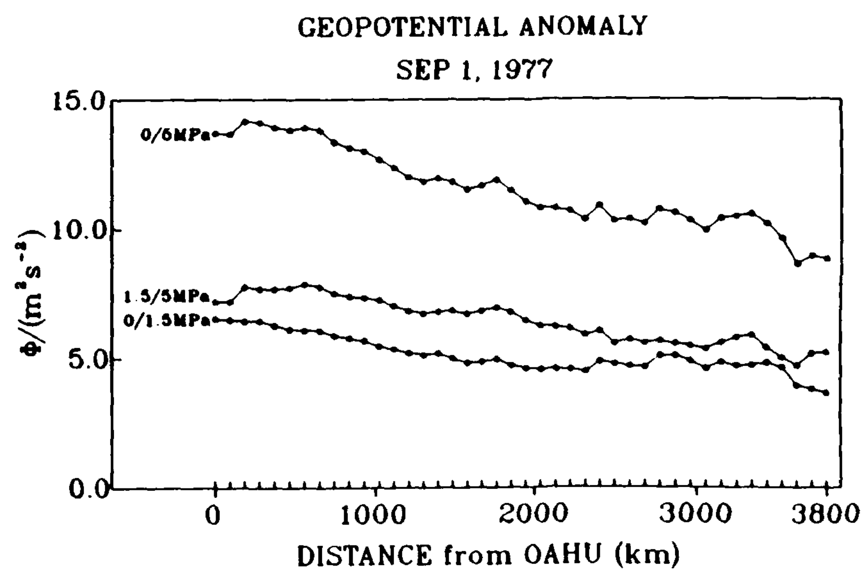
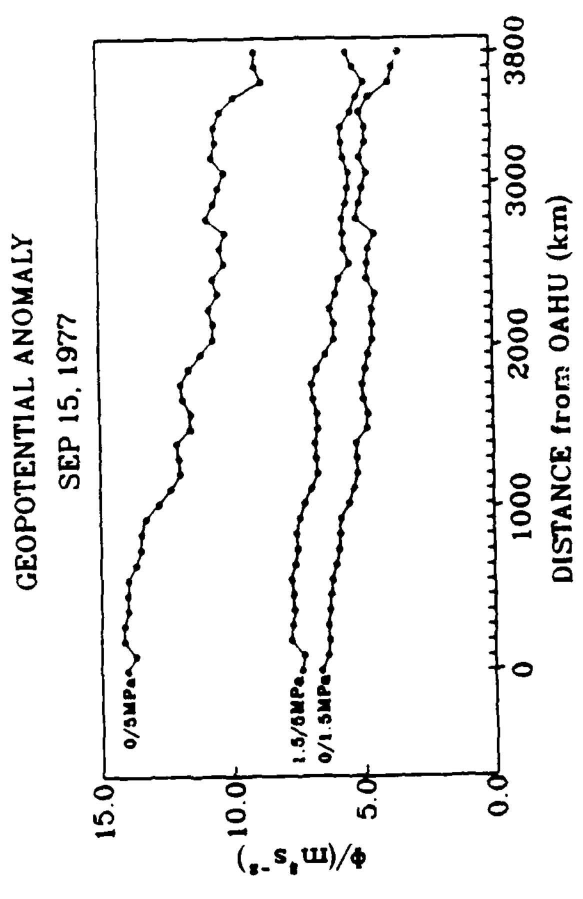
0/1.5MPa
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
SEP 1, 1977
$\Phi/(m^2s^{-2})$
0/5MPa
1.5/5MPa
0/1.5MPa
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
SEP 15, 1977
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1.5/5MPa
0/1.5MPa
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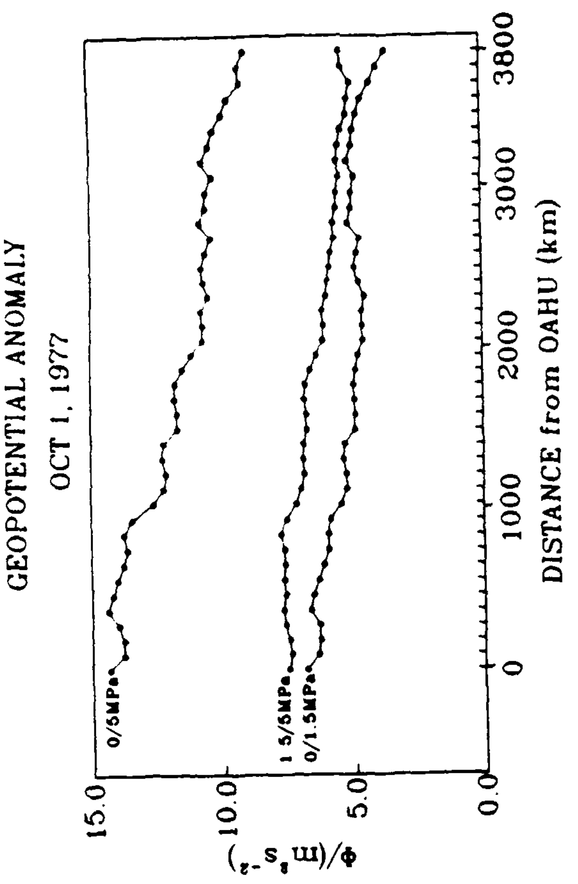
0.0
Φ/(m²s⁻²)
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
OCT 1, 1977
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1.5/5MPa
0/1.5MPa
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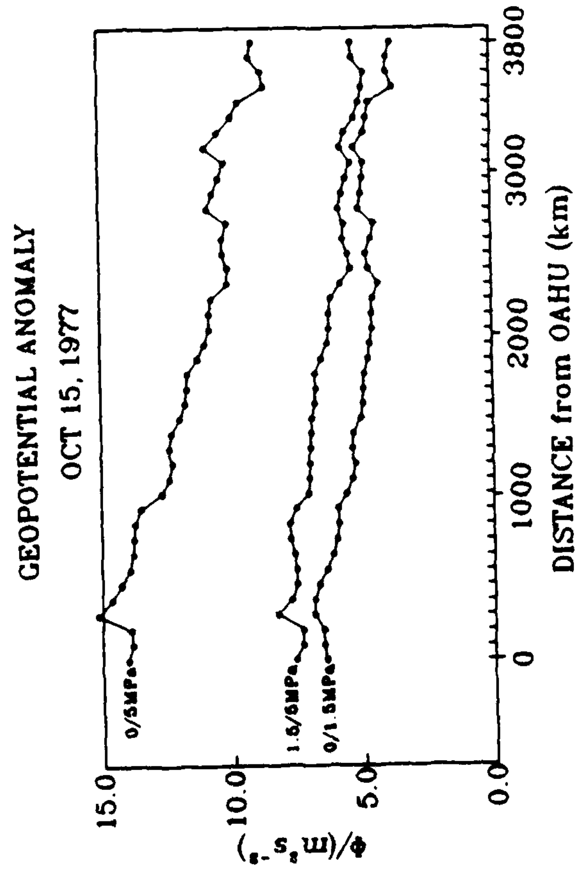
DISTANCE from OAHU (km)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OCT 15, 1977
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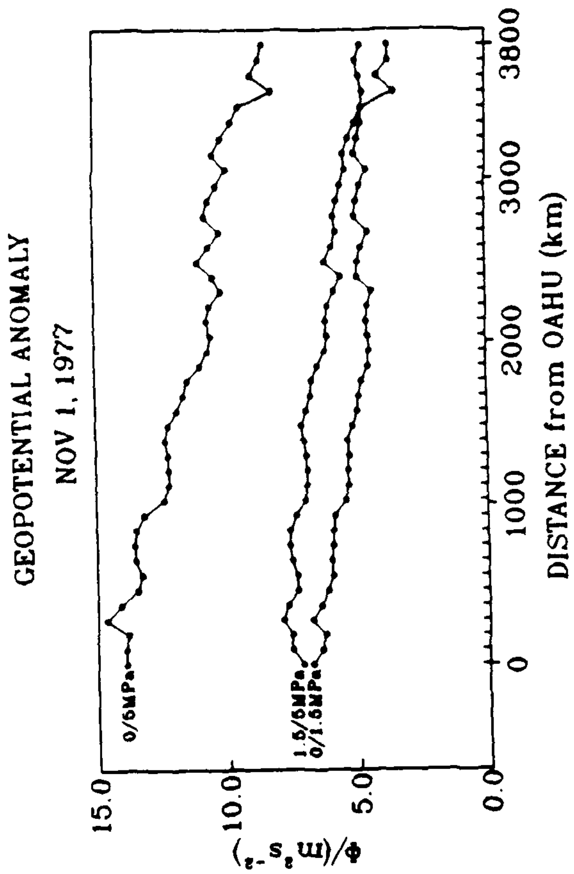
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
NOV 1, 1977
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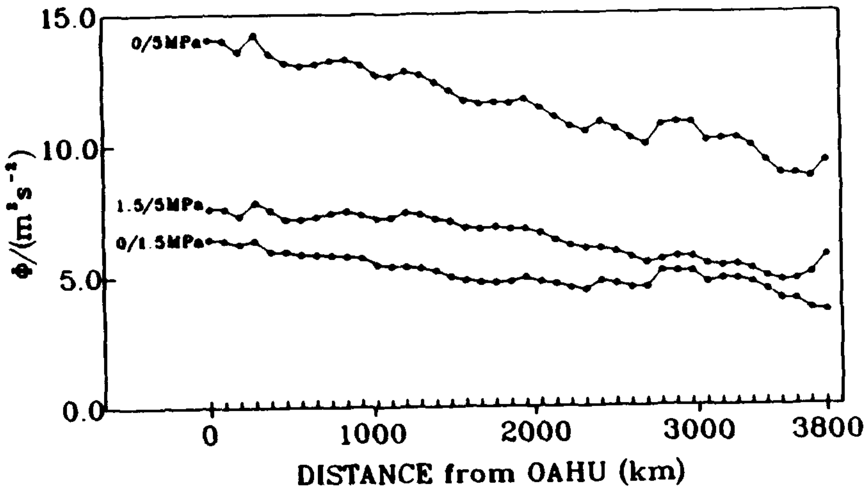
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
NOV 15, 1977



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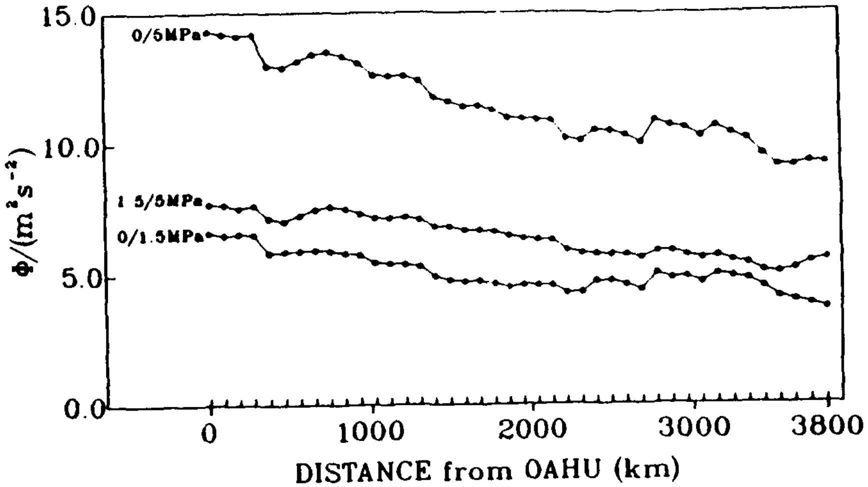
DEC 1, 1977



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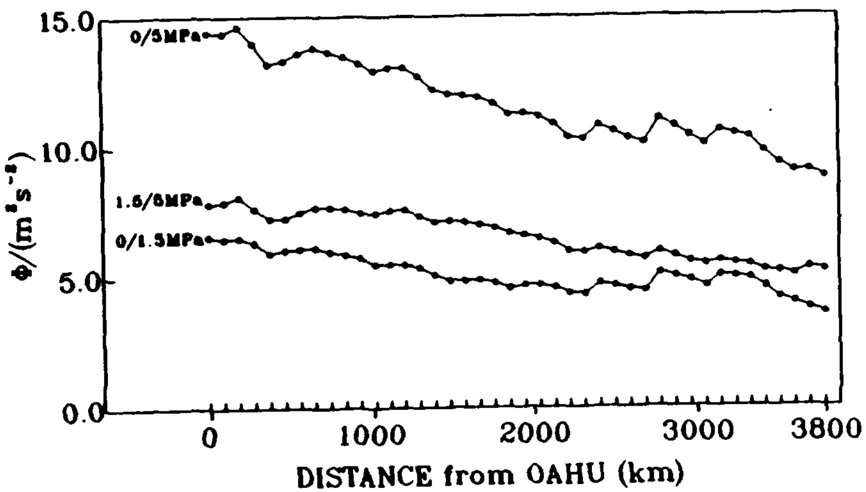
DEC 15, 1977



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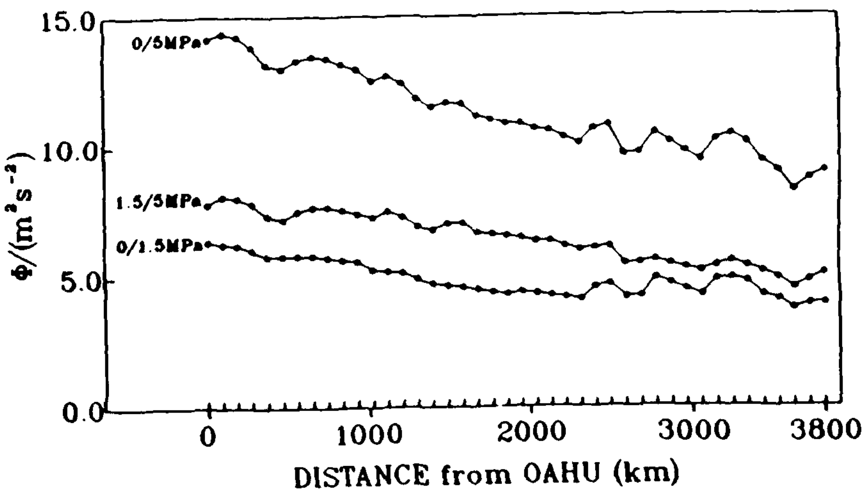
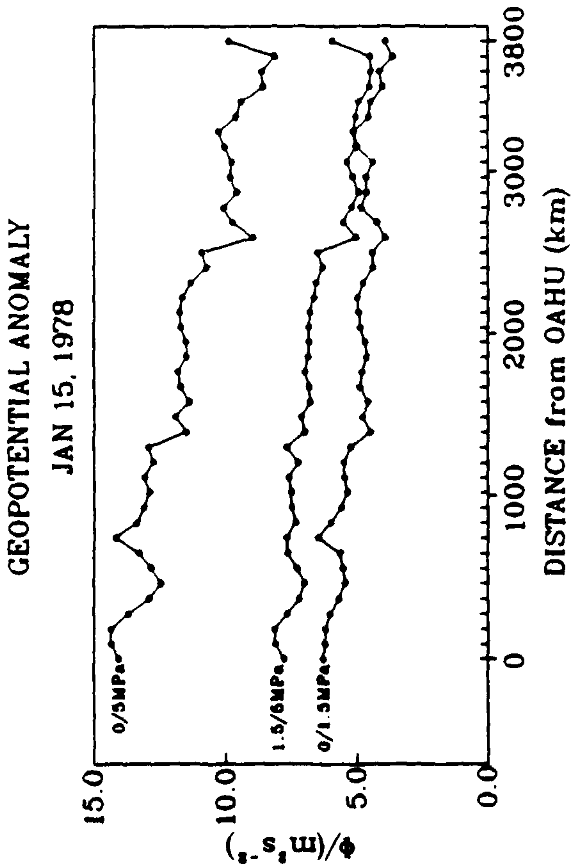
JAN 1, 1978




GEOPOTENTIAL ANOMALY
JAN 15, 1978
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1.5/5MPa
0/1.5MPa
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Φ/(m²s⁻²)
0
1000
2000
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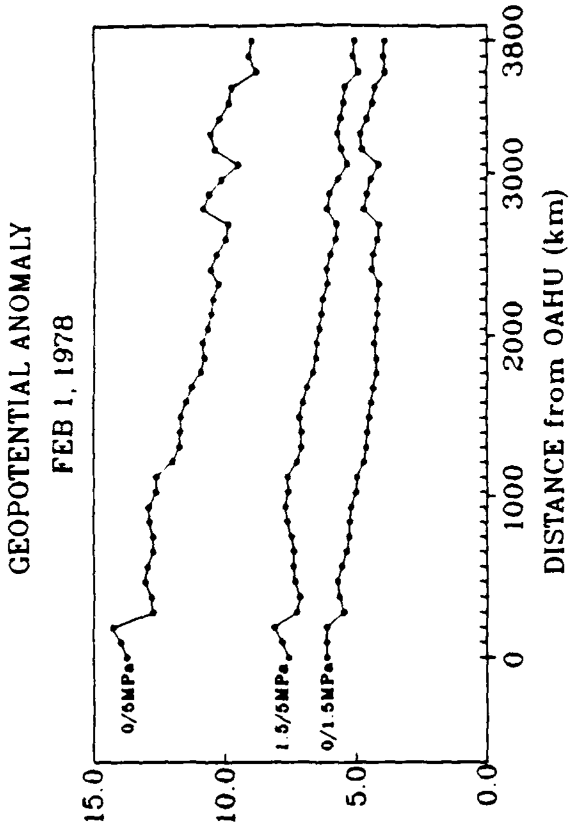
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 1, 1978
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1.5/5MPa
0/1.5MPa
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Φ/(m²s⁻²)
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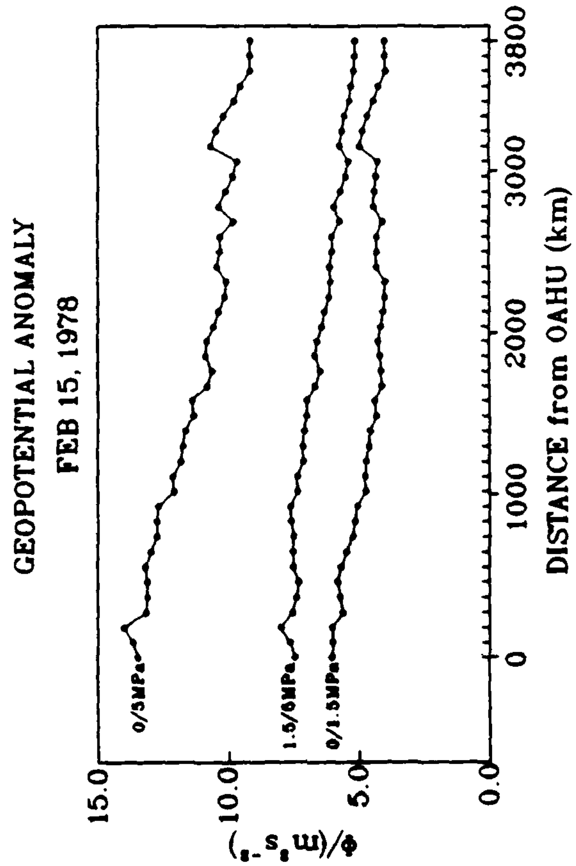
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
FEB 15, 1978
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1.5/5MPa
0/1.5MPa
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Φ/(m²s⁻²)
0
1000
2000
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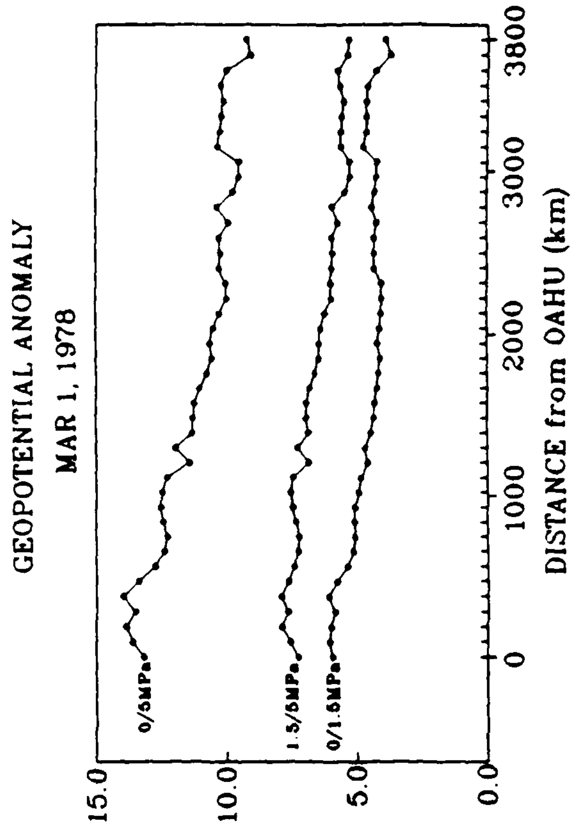
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAR 1, 1978
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0/1.5MPa
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Φ/(m²s⁻²)
0
1000
2000
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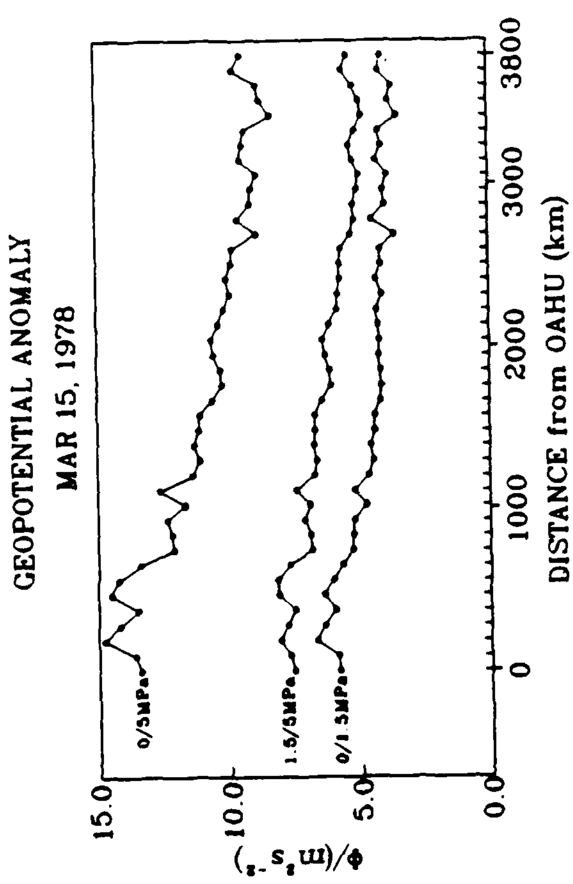
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAR 15, 1978
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0/1.5MPa
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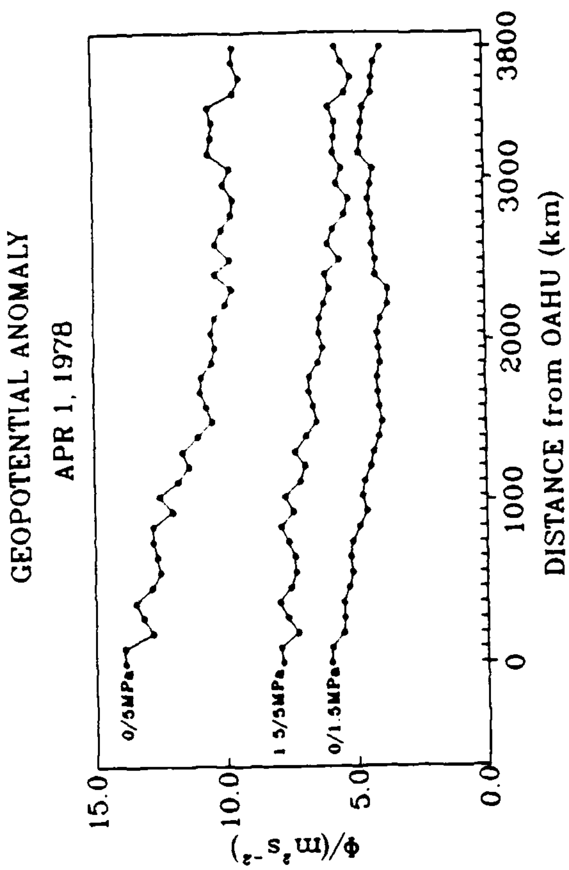
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
APR 1, 1978
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$\Phi/(m^2s^{-2})$
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1000
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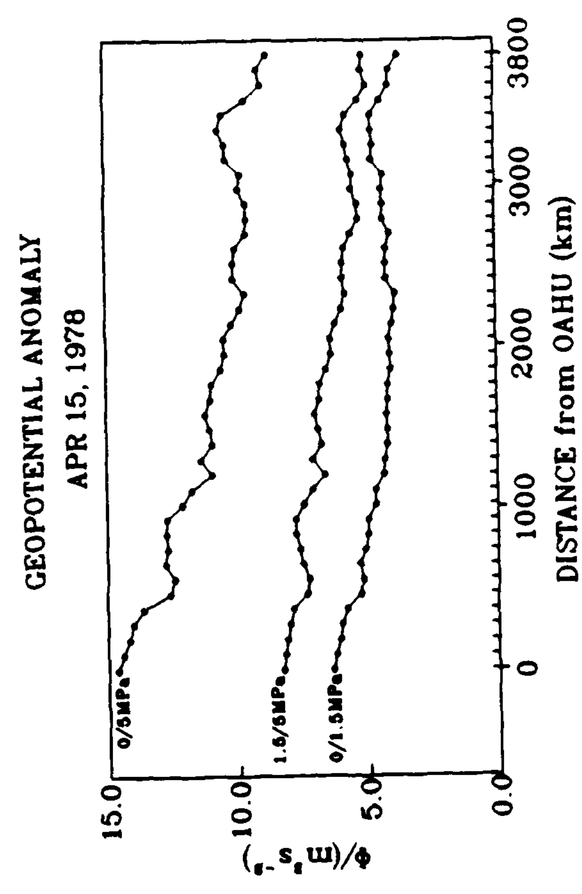
3800
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
APR 15, 1978
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1.5/5MPa
0/1.5MPa
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$\Phi/(m^2s^{-2})$
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1000
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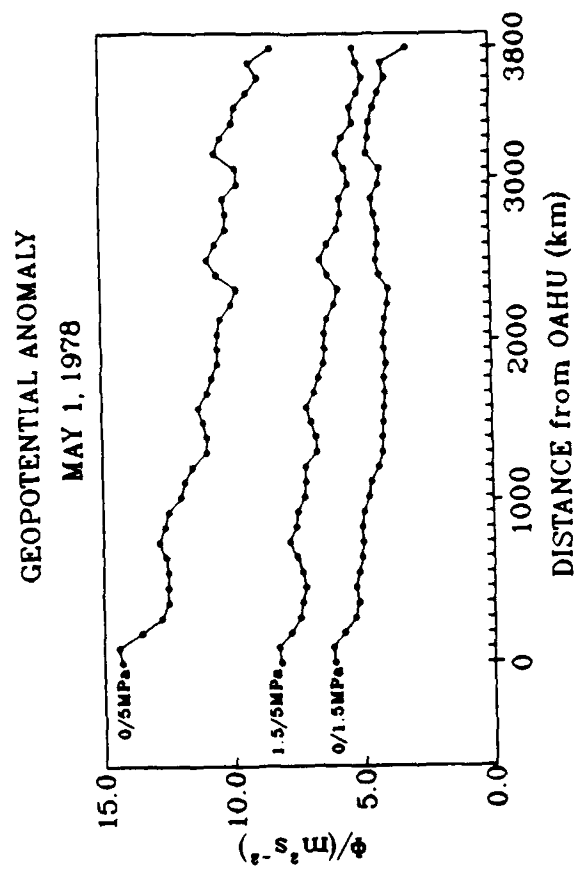
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAY 1, 1978
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1.5/5MPa
0/1.5MPa
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10.0
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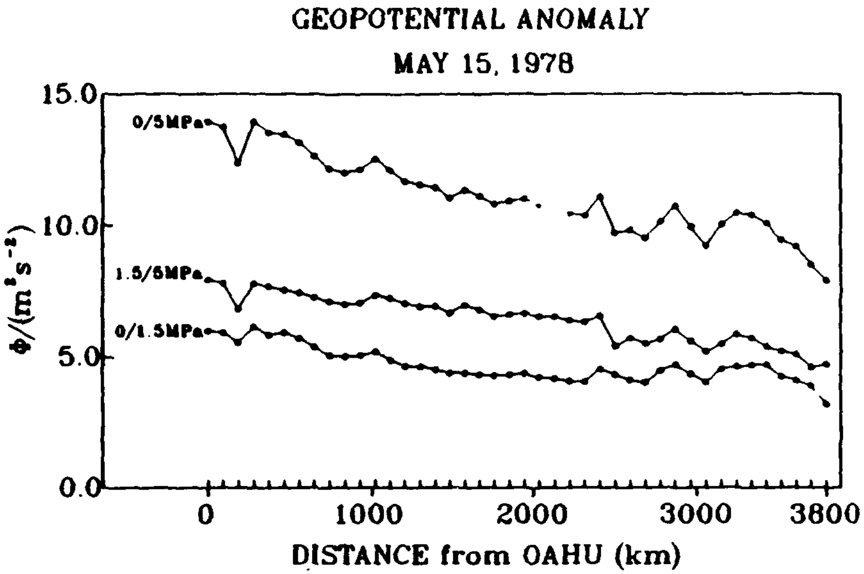
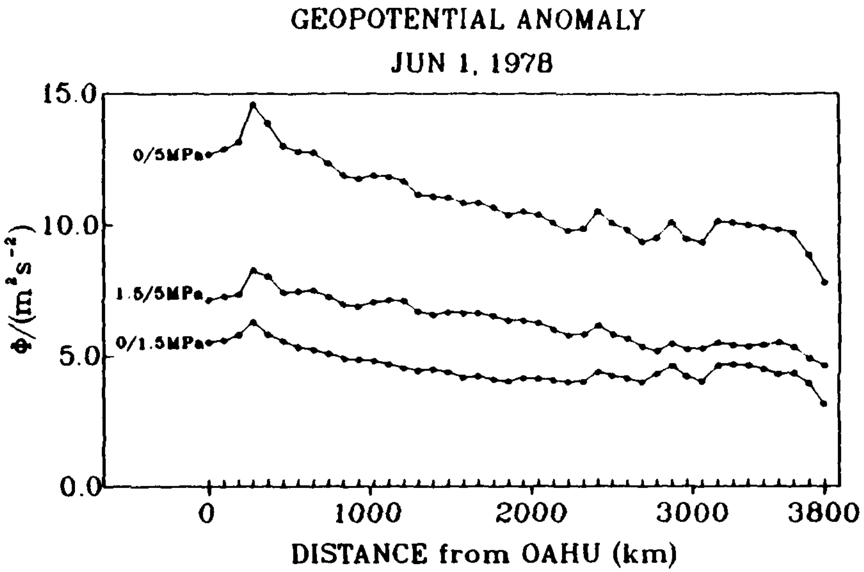
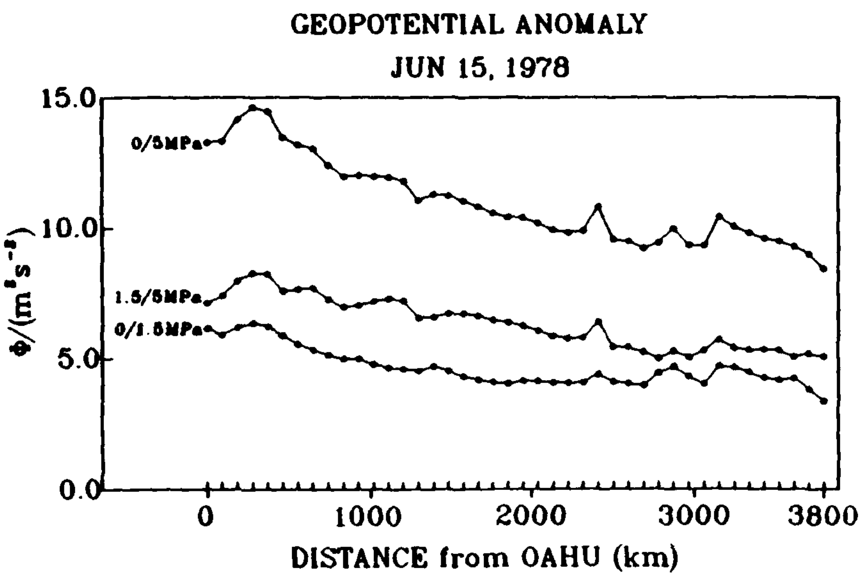
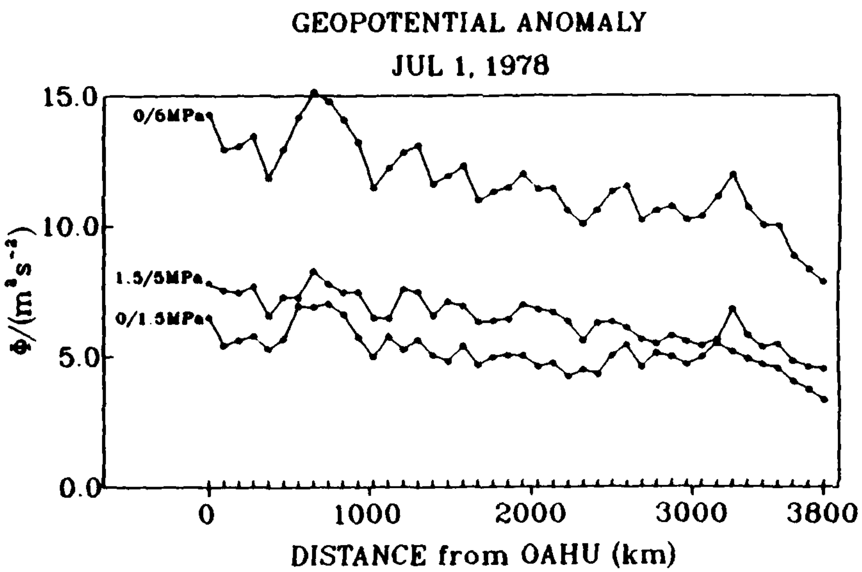
0.0
$\Phi/(m^2s^{-2})$
0
1000
2000
3000
3800
DISTANCE from OAHU (km)

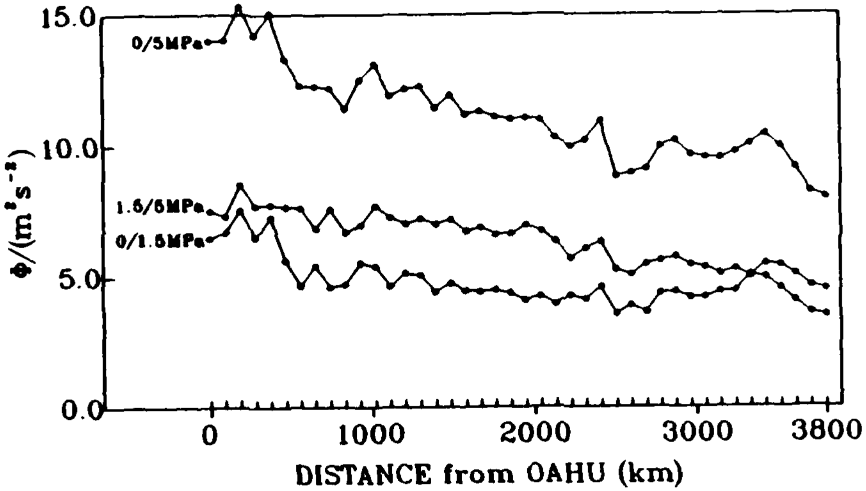

GEOPOTENTIAL ANOMALY
MAY 15, 1978
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUN 1, 1978
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
DISTANCE from OAHU (km)

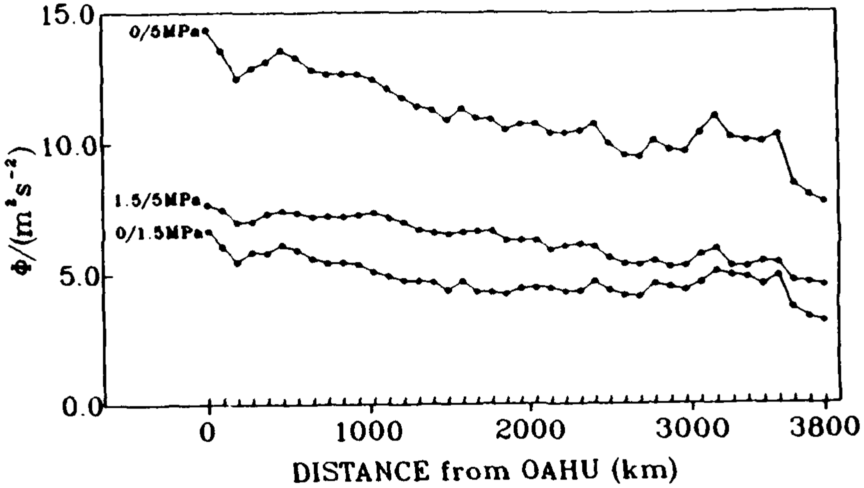

GEOPOTENTIAL ANOMALY
JUN 15, 1978
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
JUL 1, 1978
0/5MPa
1.5/5MPa
0/1.5MPa
$\Phi/(m^2s^{-2})$
DISTANCE from OAHU (km)

GEOPOTENTIAL ANOMALY
JUL 15, 1978



GEOPOTENTIAL ANOMALY
AUG 1, 1978



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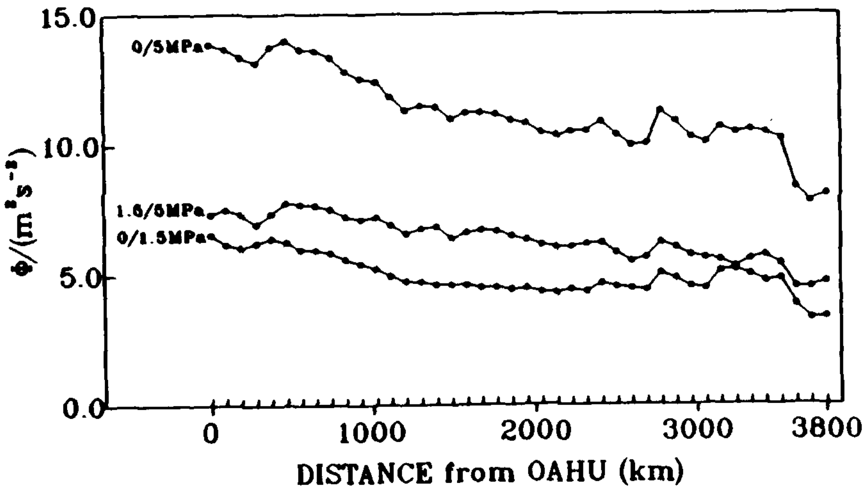
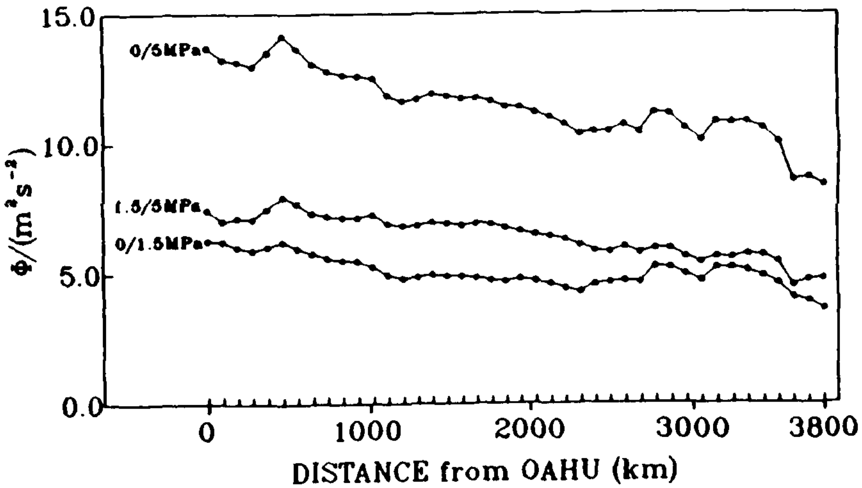
AUG 15, 1978



GEOPOTENTIAL ANOMALY
SEP 1, 1978



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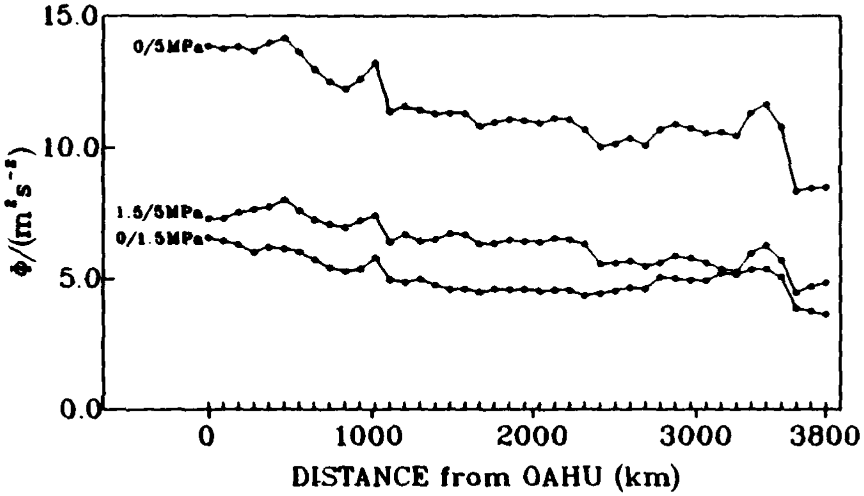
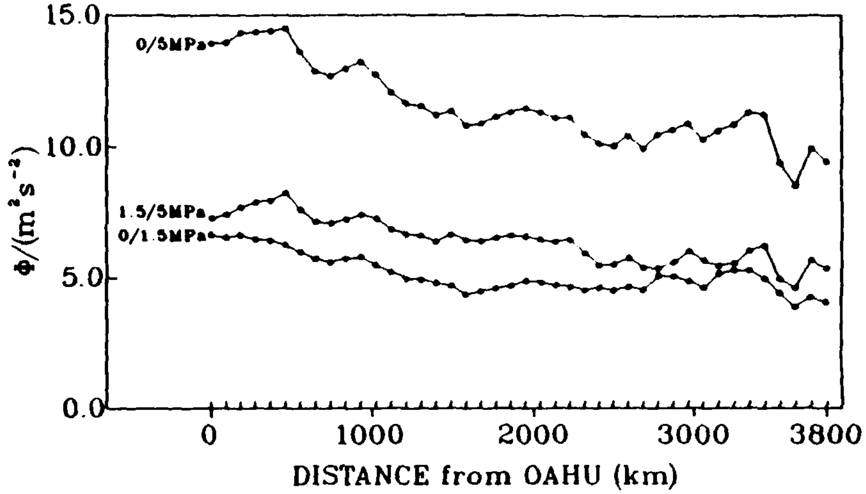
SEP 15, 1978



GEOPOTENTIAL ANOMALY
OCT 1, 1978



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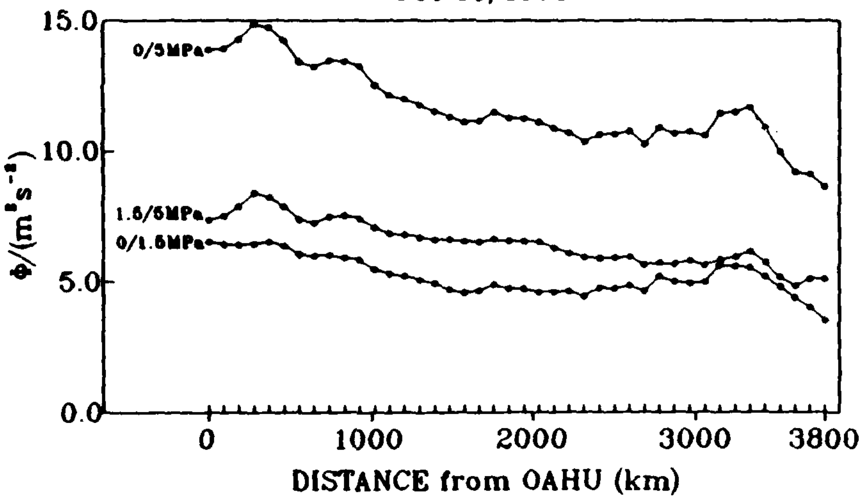
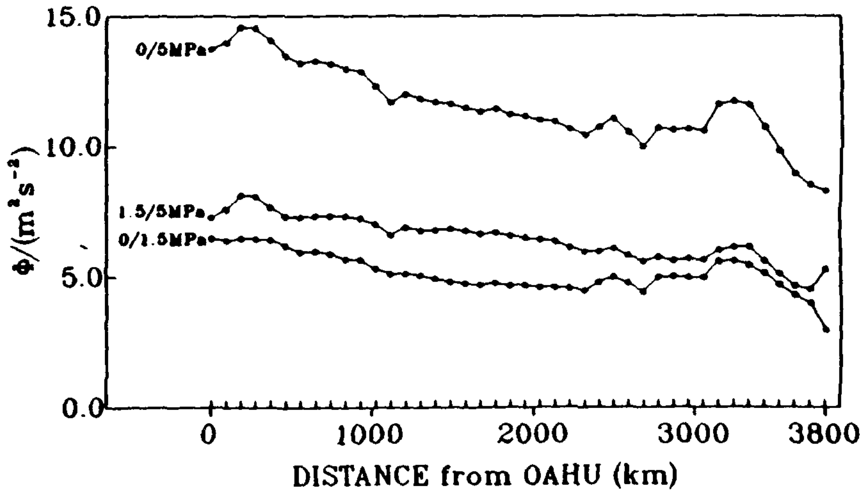
OCT 15, 1978



GEOPOTENTIAL ANOMALY
NOV 1, 1978



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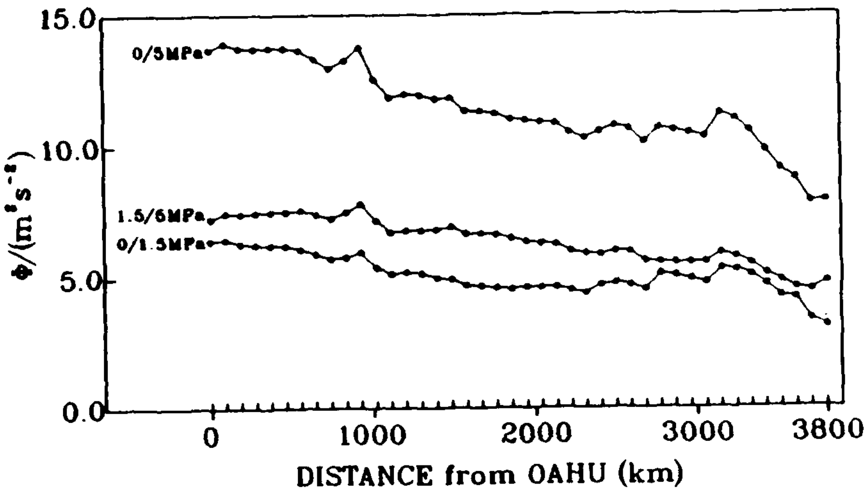
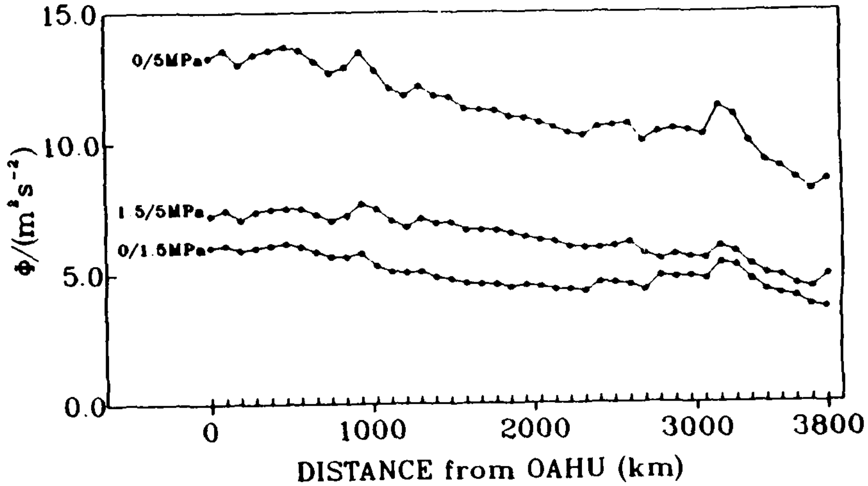
NOV 15, 1978



GEOPOTENTIAL ANOMALY
DEC 1, 1978



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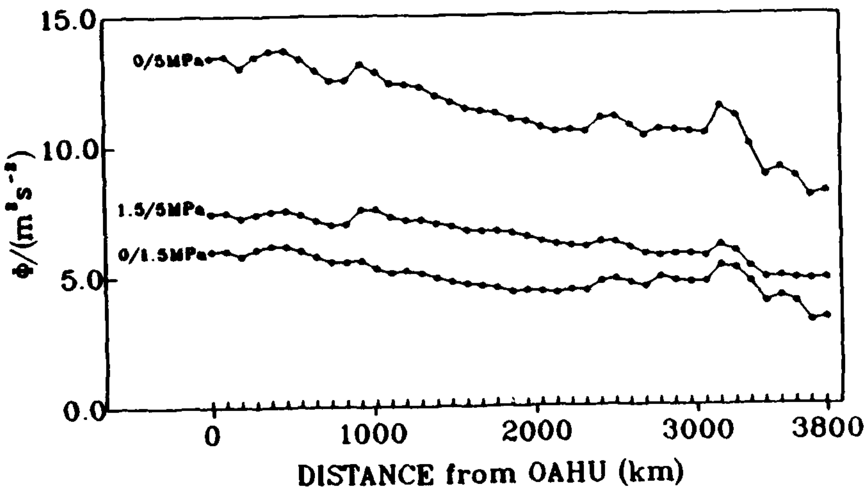
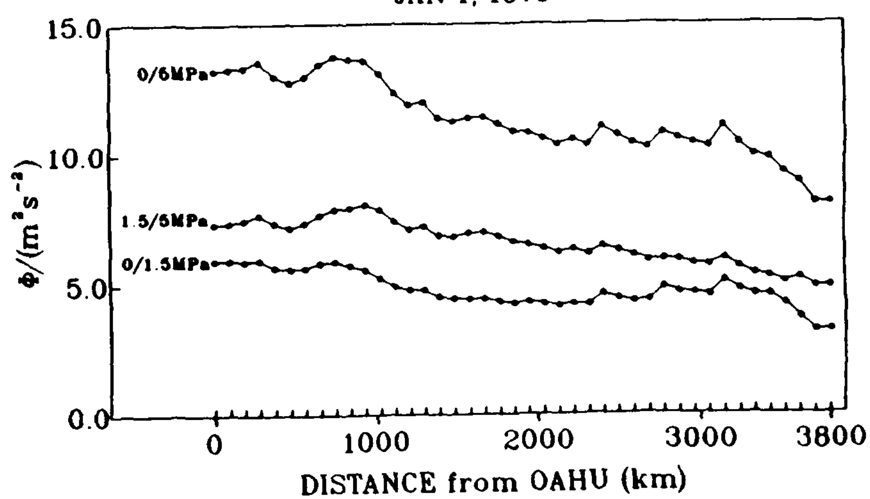
DEC 15, 1978



GEOPOTENTIAL ANOMALY
JAN 1, 1979



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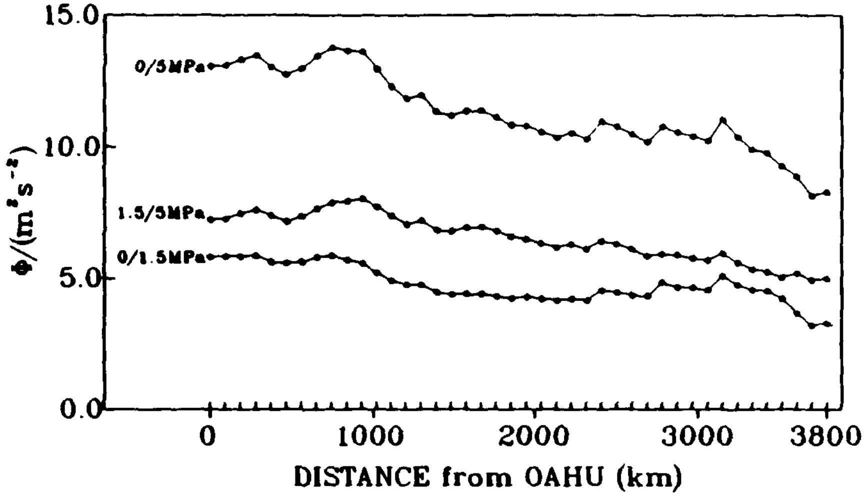
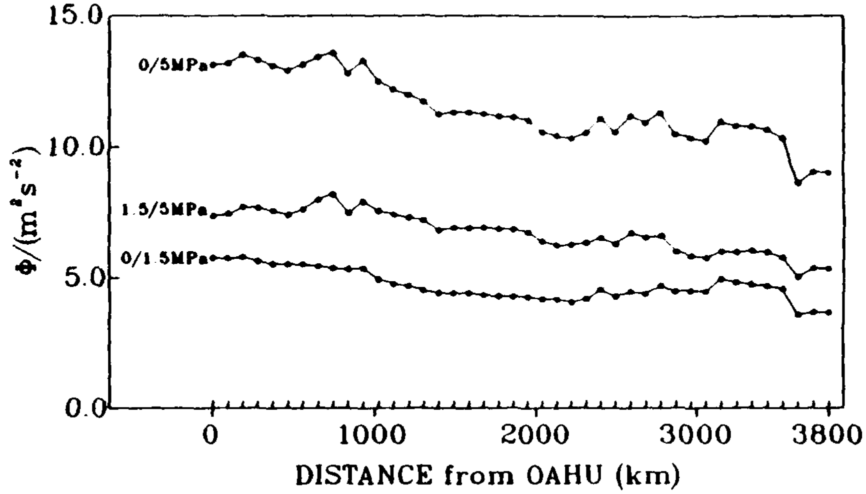


GEOPOTENTIAL ANOMALY
FEB 1, 1979



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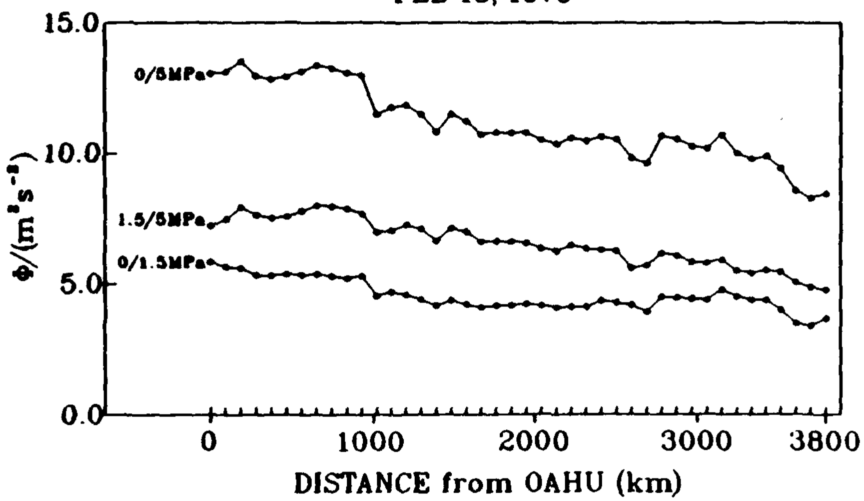
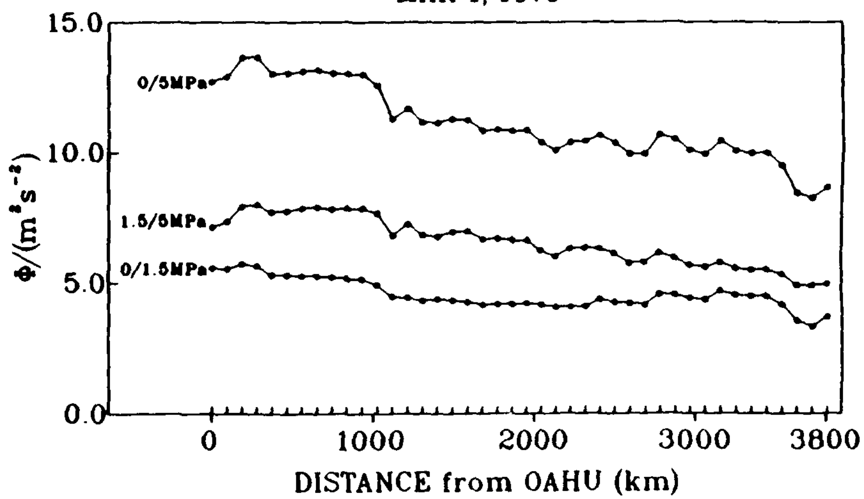
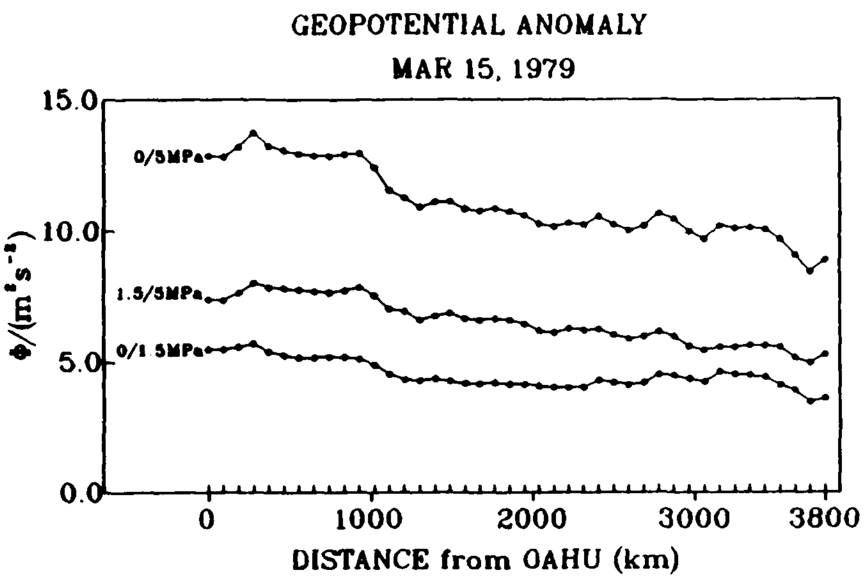
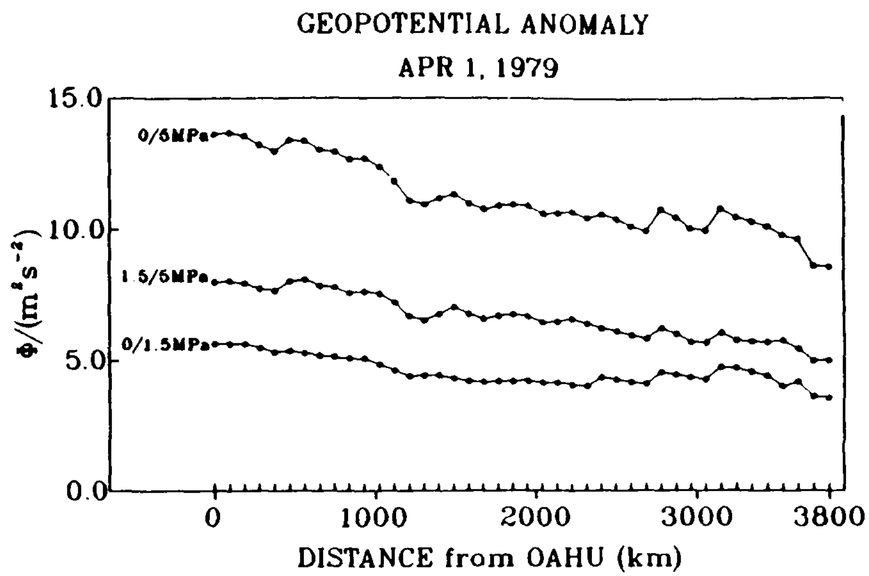
FEB 15, 1979

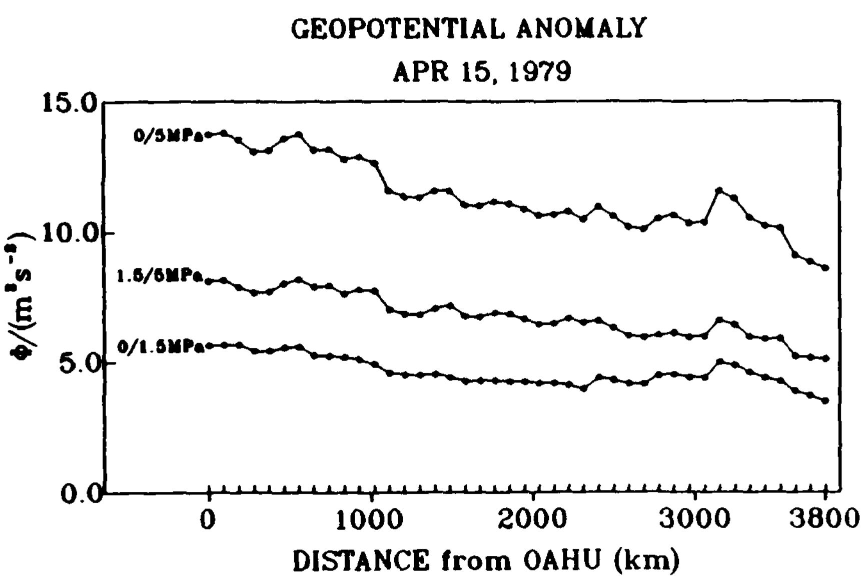


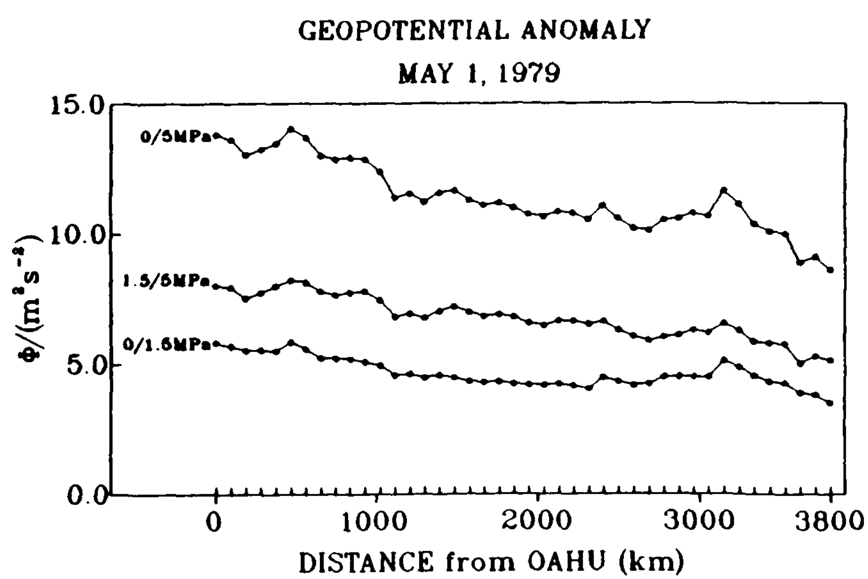
GEOPOTENTIAL ANOMALY
MAR 1, 1979

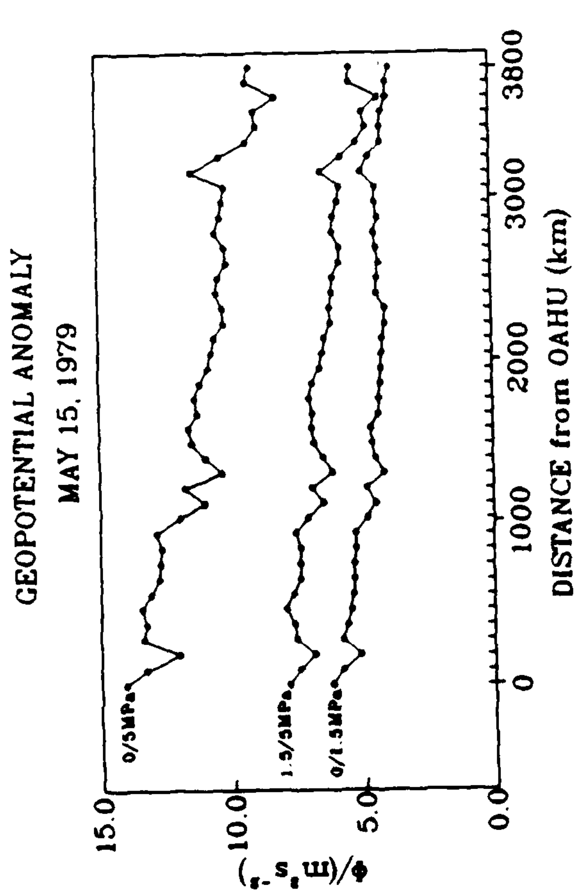


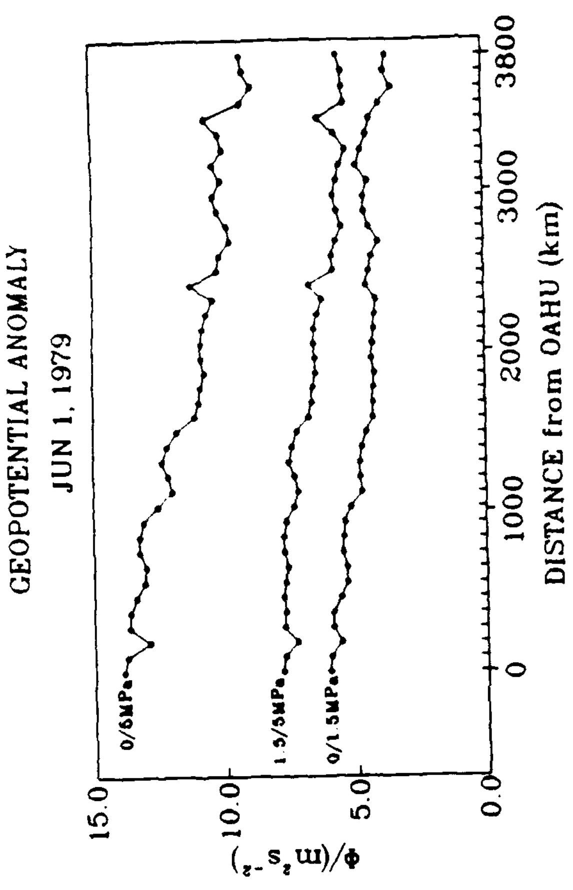

GEOPOTENTIAL ANOMALY
MAR 15, 1979
0/5MPa
1.5/5MPa
0/1.5MPa
Φ/(m²s⁻²)
DISTANCE from OAHU (km)

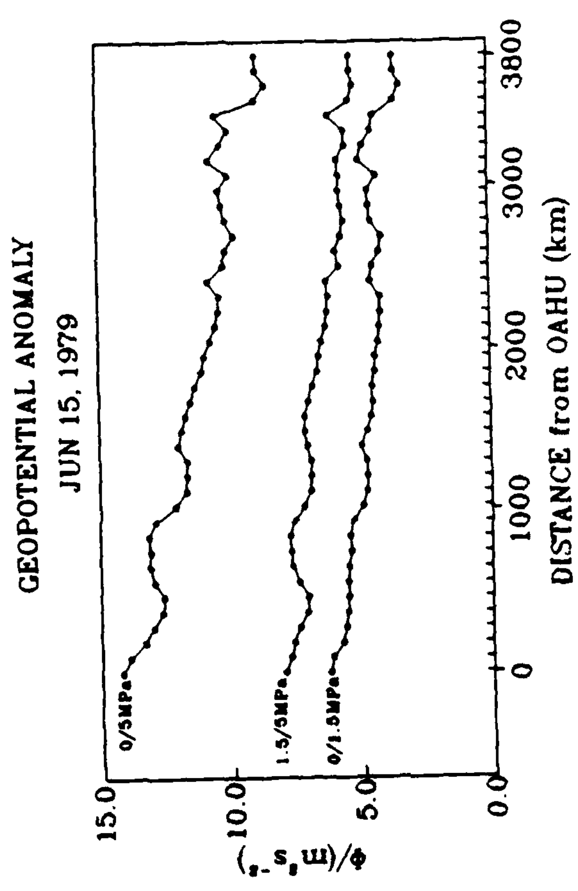

GEOPOTENTIAL ANOMALY
APR 1, 1979
0/5MPa
1.5/5MPa
0/1.5MPa
Φ/(m²s⁻²)
DISTANCE from OAHU (km)

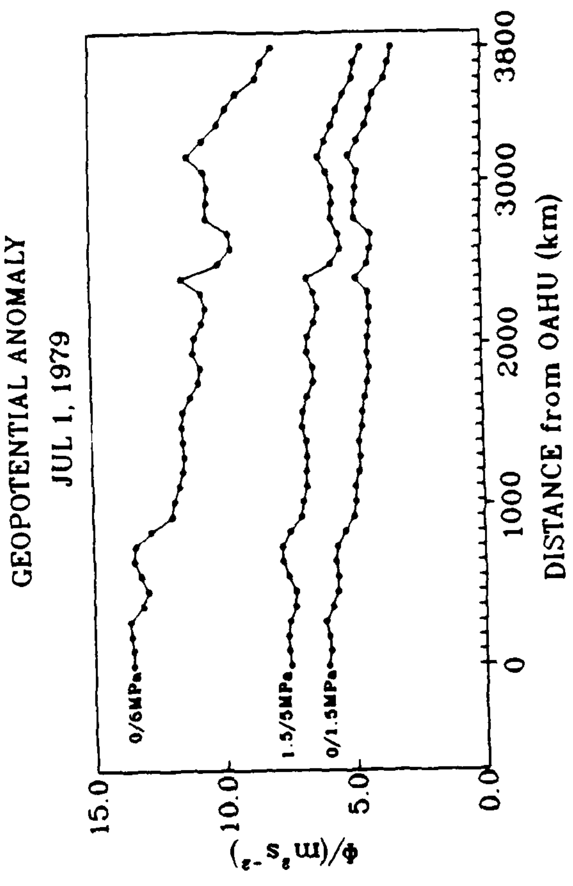

GEOPOTENTIAL ANOMALY
APR 15, 1979
0/5MPa
1.5/5MPa
0/1.5MPa
Φ/(m²s⁻²)
DISTANCE from OAHU (km)


GEOPOTENTIAL ANOMALY
MAY 1, 1979
0/5MPa
1.5/5MPa
0/1.5MPa
Φ/(m²s⁻²)
DISTANCE from OAHU (km)

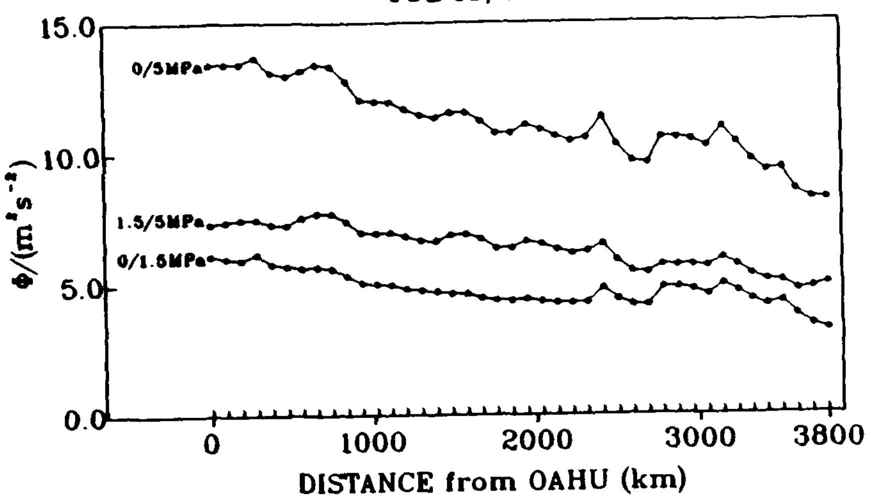

GEOPOTENTIAL ANOMALY
MAY 15, 1979
DISTANCE from OAHU (km)
$\phi/(m^2 s^{-2})$
0/5MPa
1.5/5MPa
0/1.5MPa


GEOPOTENTIAL ANOMALY
JUN 1, 1979
DISTANCE from OAHU (km)
$\phi/(m^2 s^{-2})$
0/5MPa
1.5/5MPa
0/1.5MPa

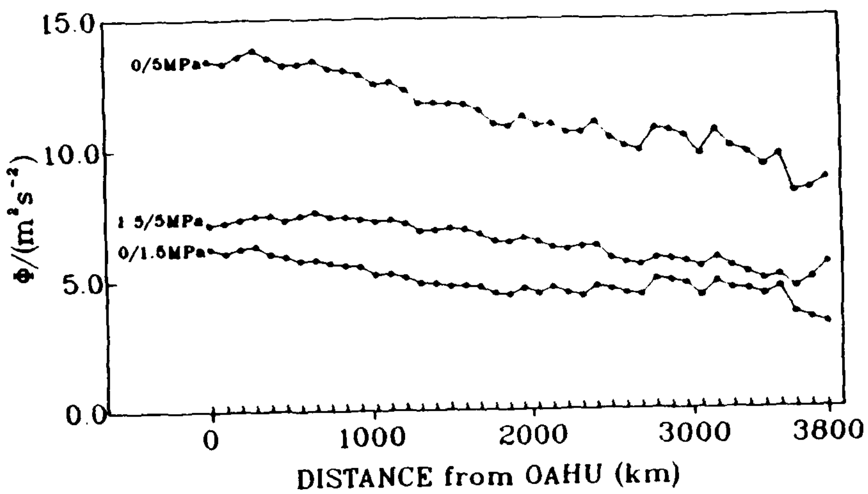

GEOPOTENTIAL ANOMALY
JUN 15, 1979
DISTANCE from OAHU (km)
$\phi/(m^2 s^{-2})$
0/5MPa
1.5/5MPa
0/1.5MPa


GEOPOTENTIAL ANOMALY
JUL 1, 1979
DISTANCE from OAHU (km)
$\phi/(m^2 s^{-2})$
0/5MPa
1.5/5MPa
0/1.5MPa

GEOPOTENTIAL ANOMALY
JUL 15, 1979



GEOPOTENTIAL ANOMALY
AUG 1, 1979



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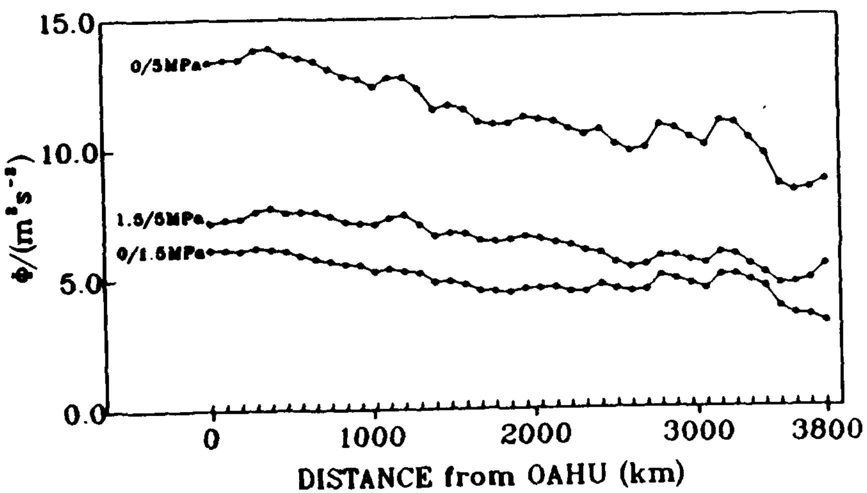
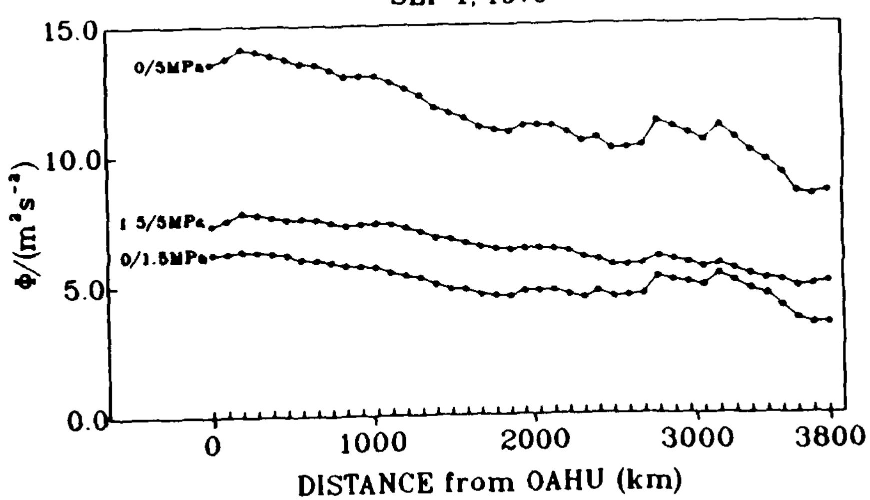
AUG 15, 1979



GEOPOTENTIAL ANOMALY
SEP 1, 1979



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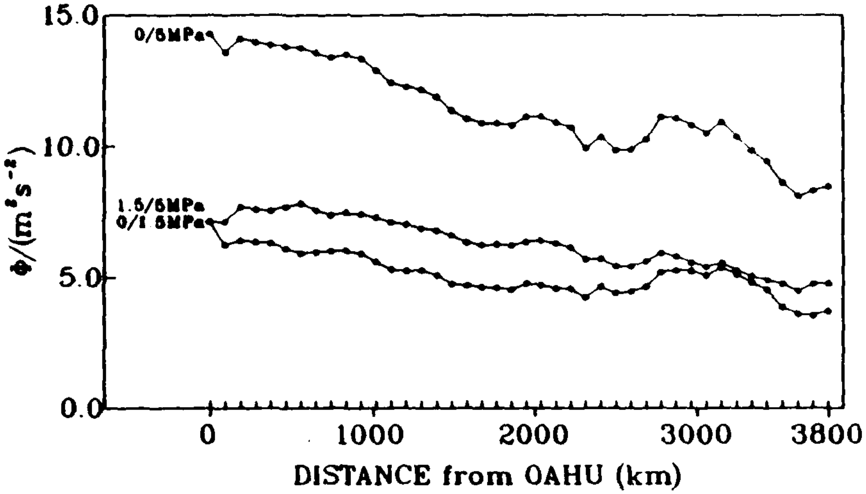
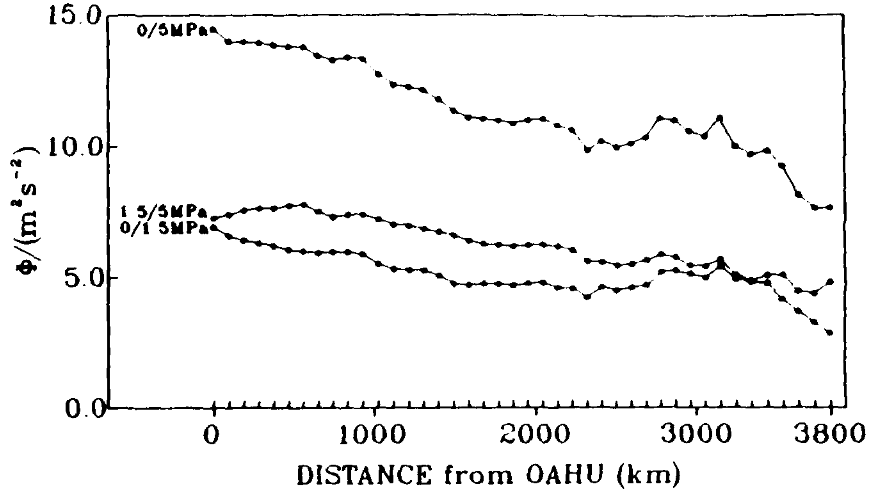
SEP 15, 1979



GEOPOTENTIAL ANOMALY
OCT 1, 1979



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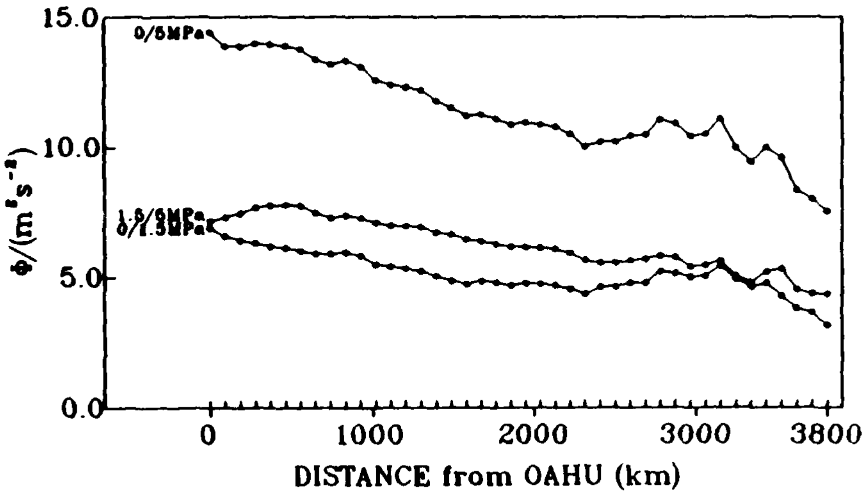
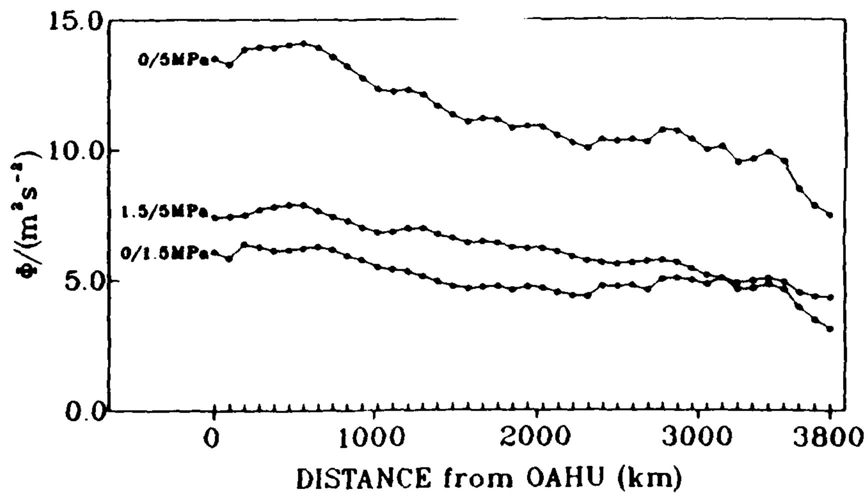
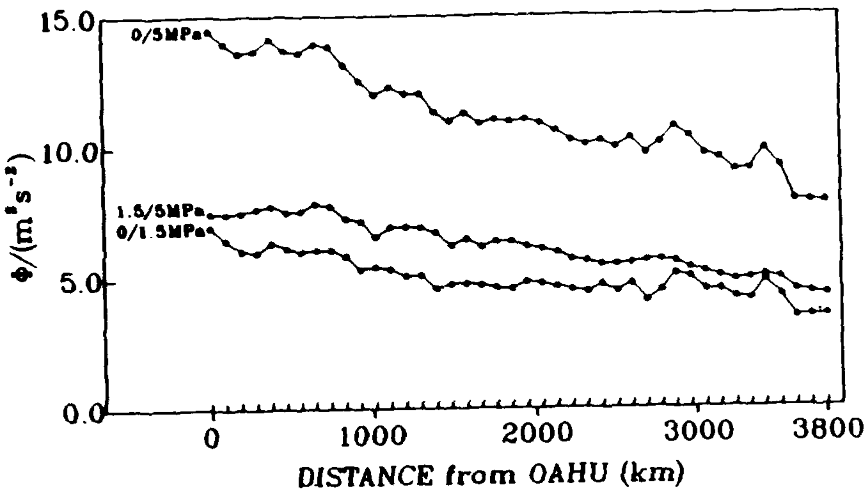
OCT 15, 1979



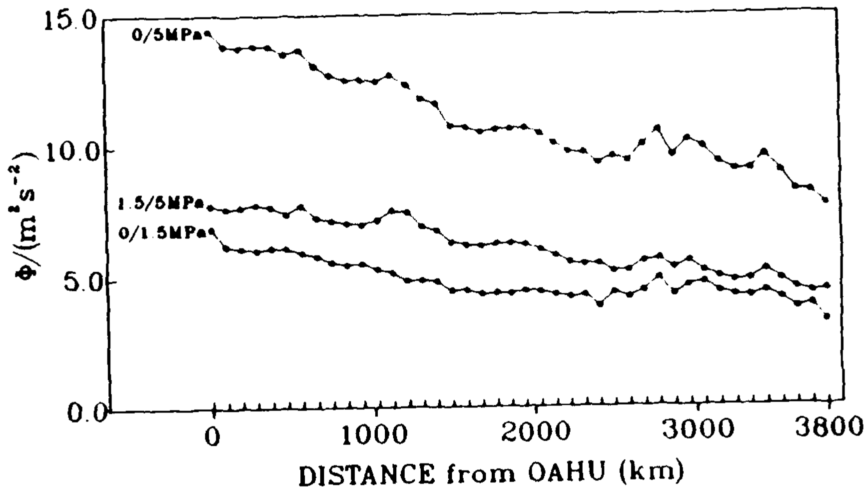
GEOPOTENTIAL ANOMALY
NOV 1 1979



GEOPOTENTIAL ANOMALY
NOV 15, 1979



GEOPOTENTIAL ANOMALY
DEC 1, 1979



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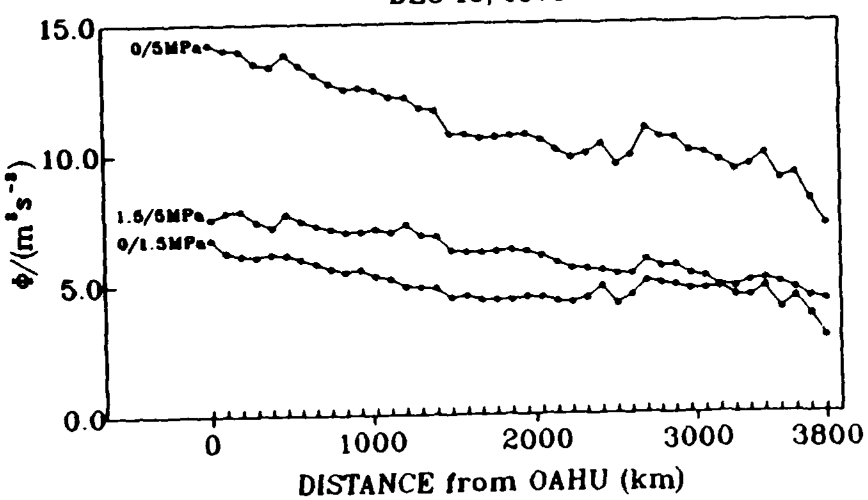
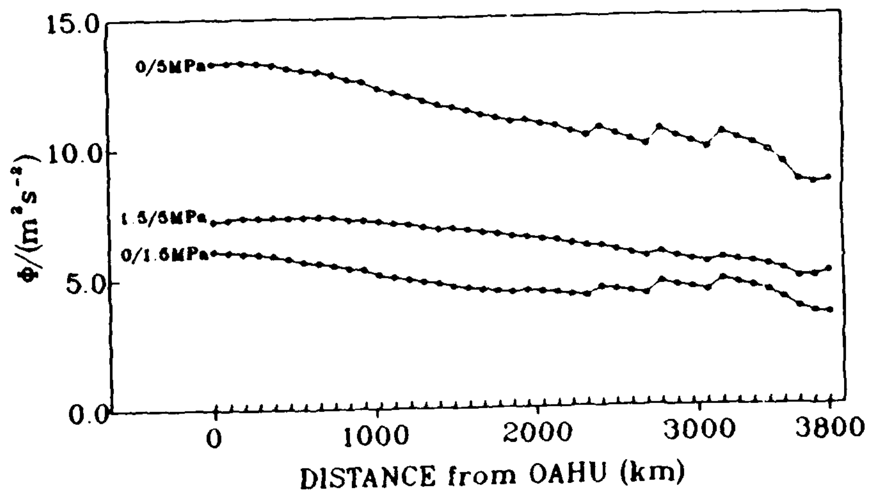
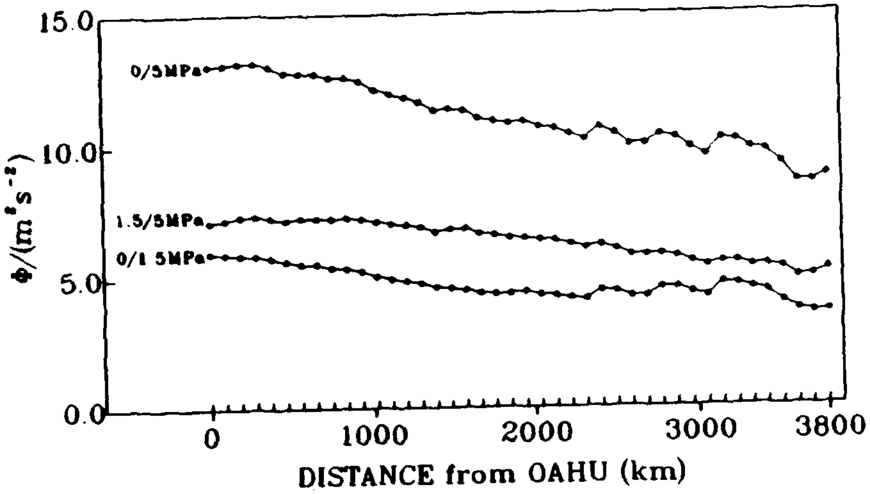
DEC 15, 1979



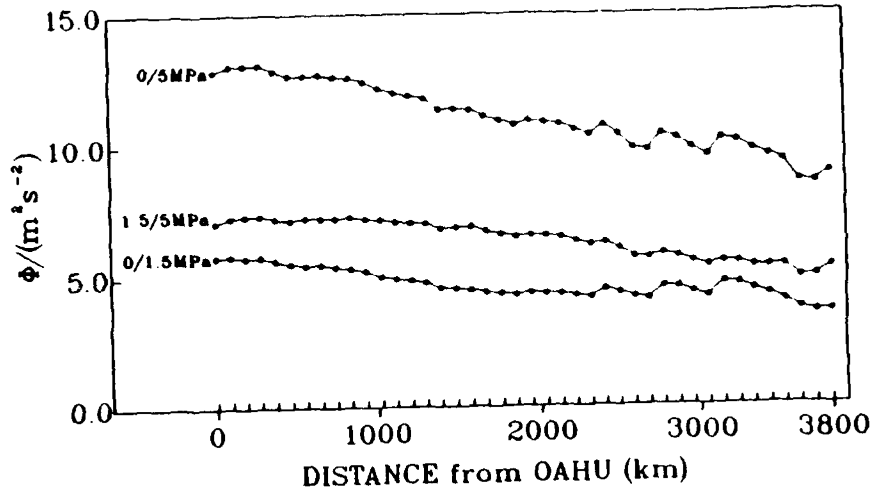
GEOPOTENTIAL ANOMALY
12-YEAR MEAN



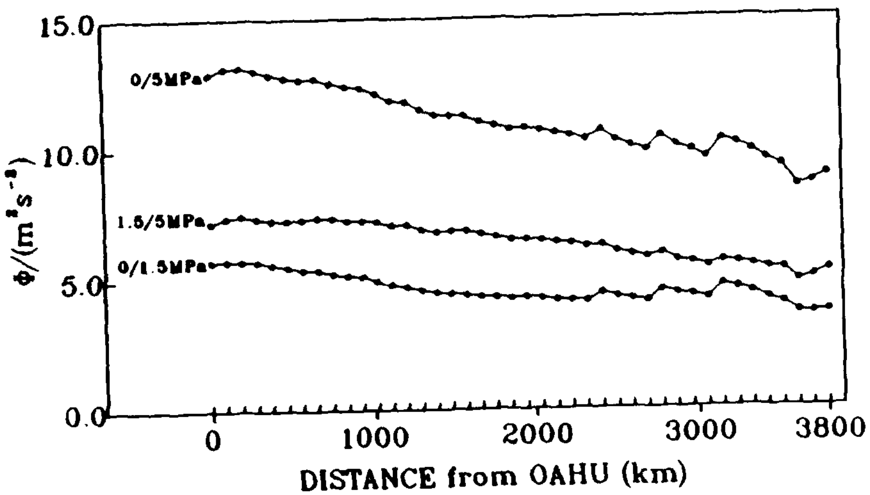
GEOPOTENTIAL ANOMALY
JAN 1 MEAN



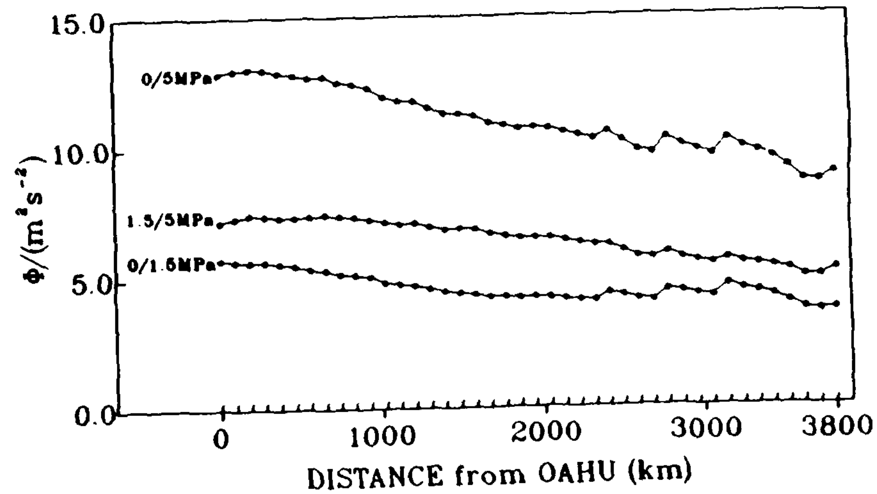
GEOPOTENTIAL ANOMALY
JAN 15 MEAN



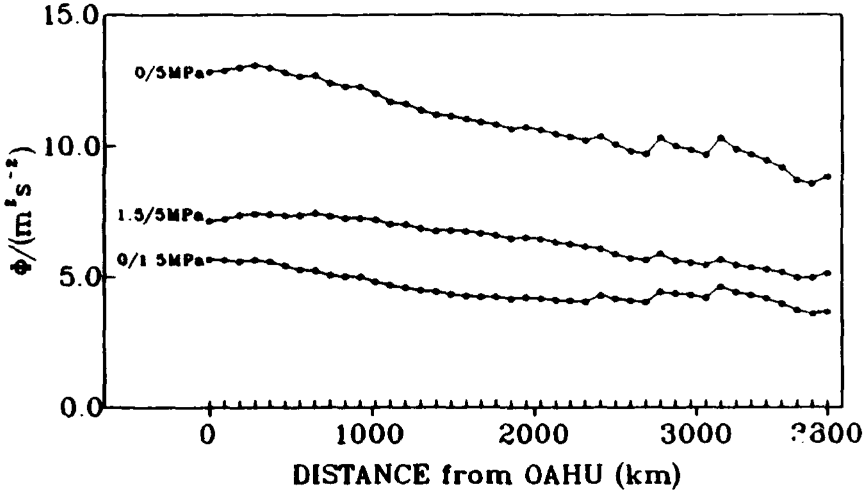
GEOPOTENTIAL ANOMALY
FEB 1 MEAN



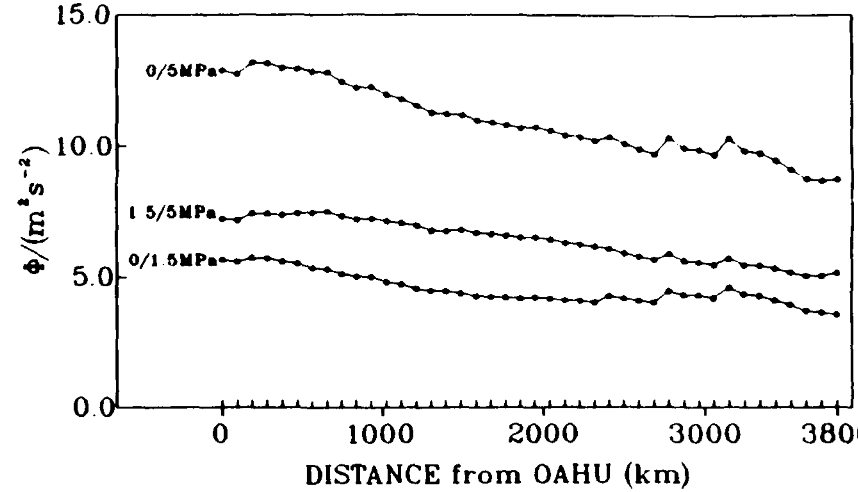
GEOPOTENTIAL ANOMALY
FEB 15 MEAN



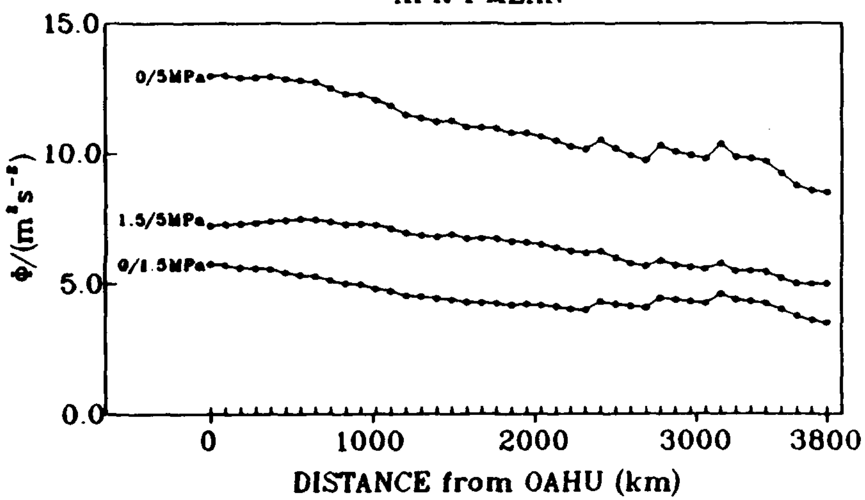
GEOPOTENTIAL ANOMALY
MAR 1 MEAN



GEOPOTENTIAL ANOMALY
MAR 15 MEAN



GEOPOTENTIAL ANOMALY
APR 1 MEAN



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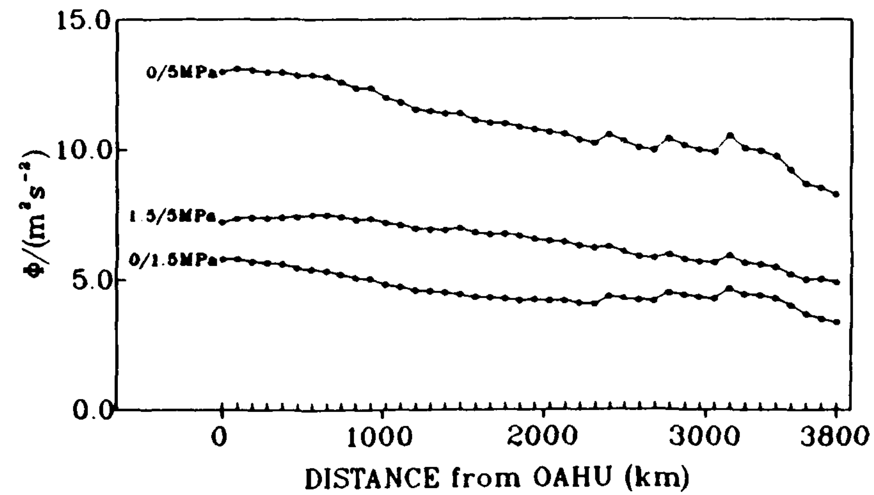

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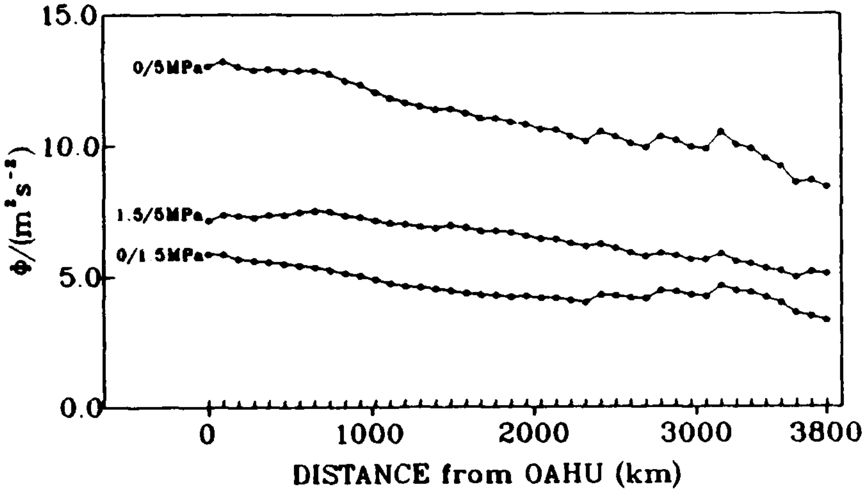
MAY 1 MEAN



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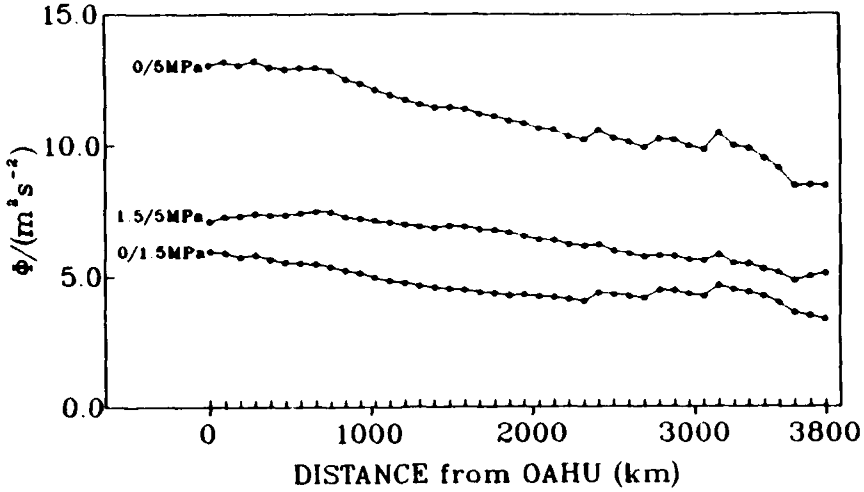
MAY 15 MEAN



GEOPOTENTIAL ANOMALY
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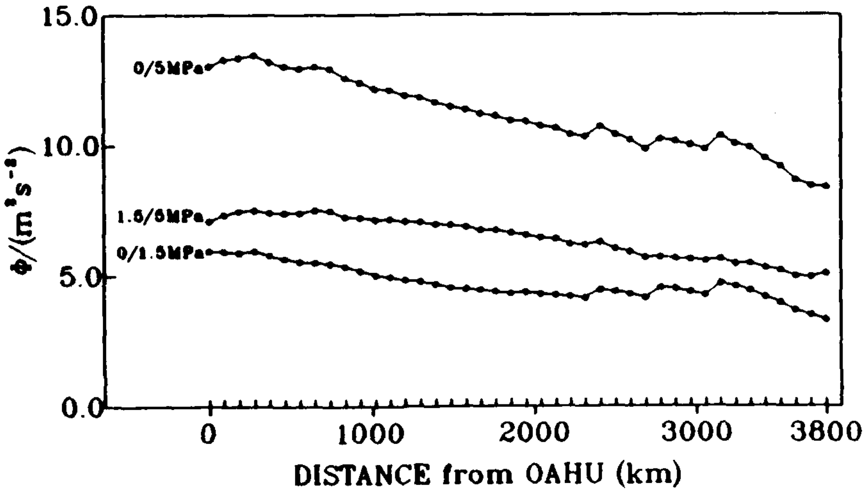

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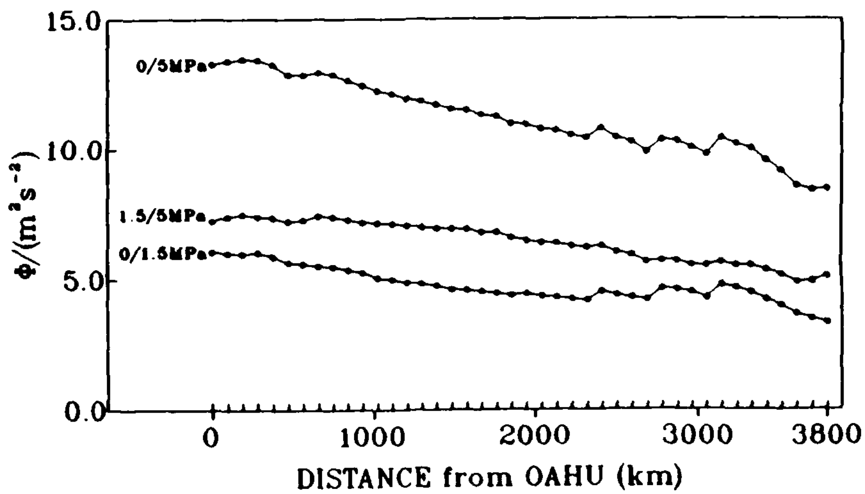

GEOPOTENTIAL ANOMALY
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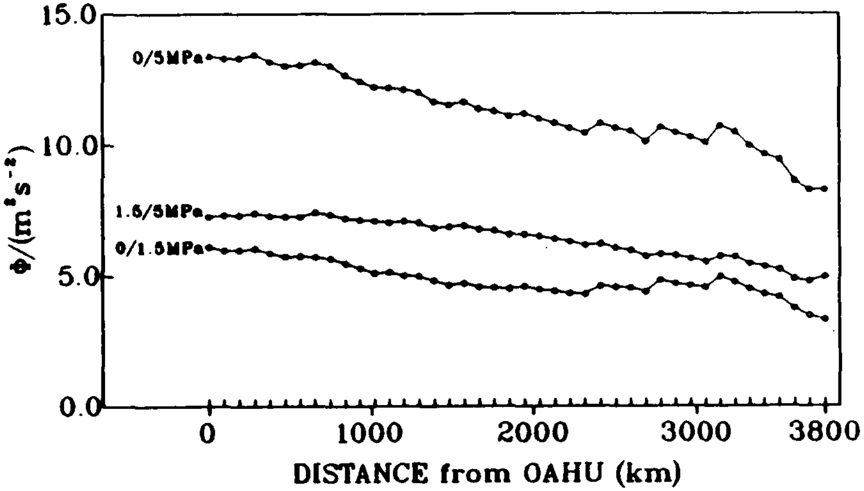
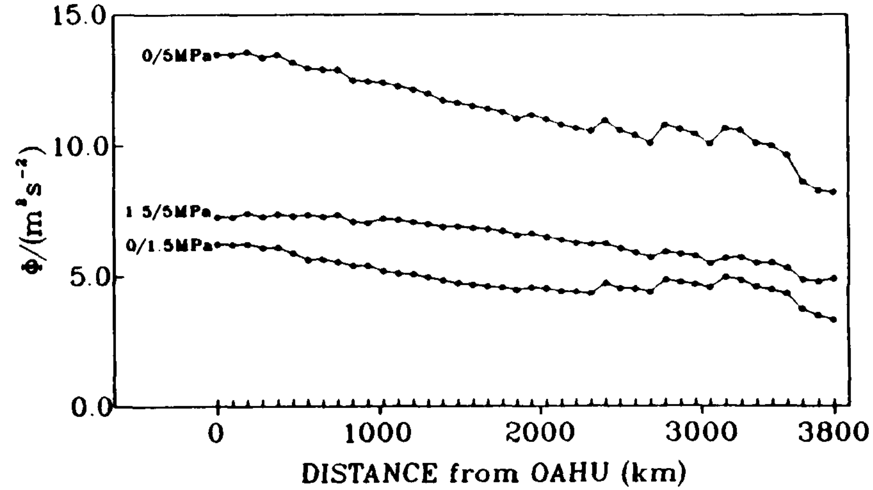
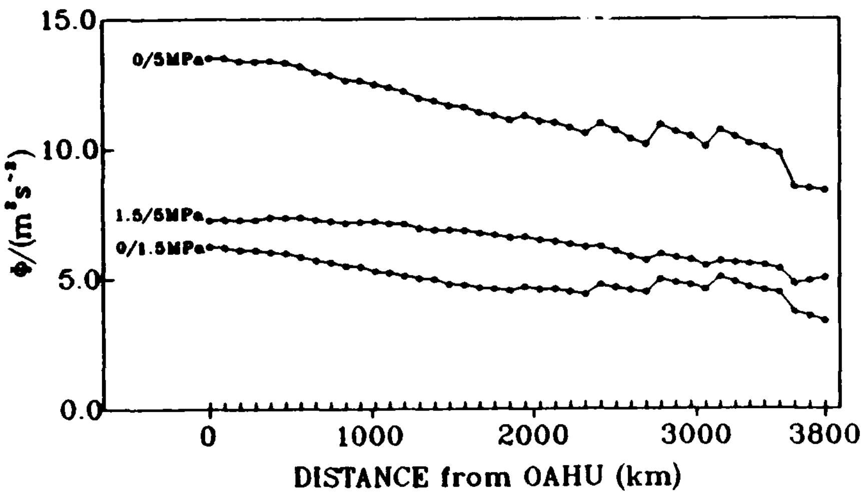


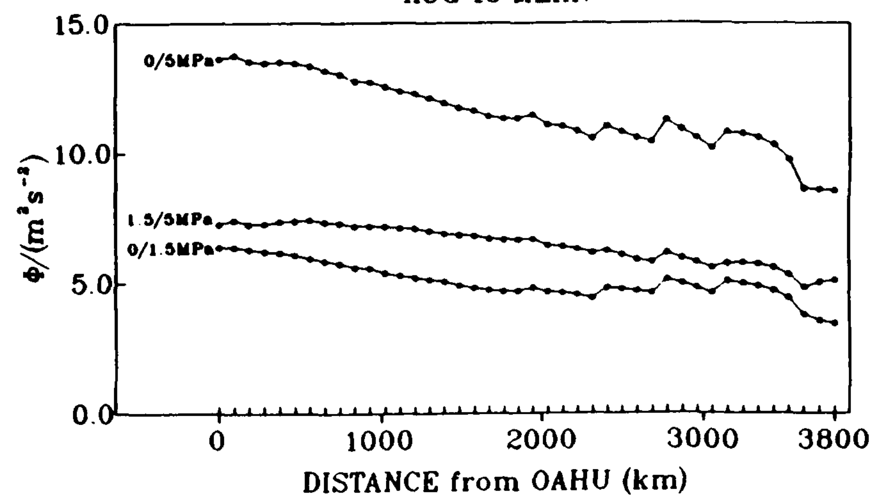
GEOPOTENTIAL ANOMALY
JUL 15 MEAN



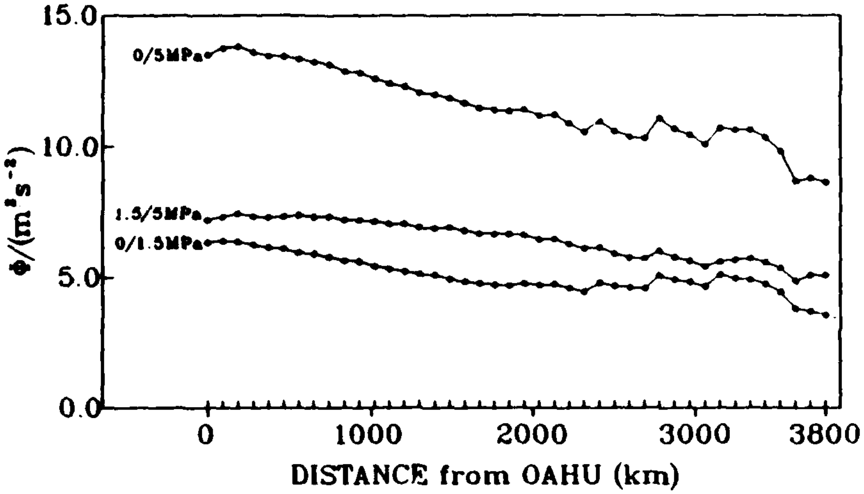
GEOPOTENTIAL ANOMALY
AUG 1 MEAN



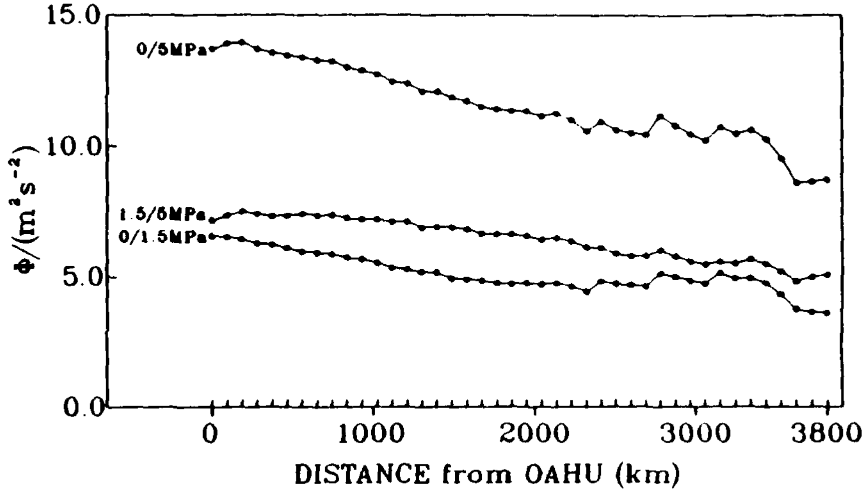
GEOPOTENTIAL ANOMALY
AUG 15 MEAN



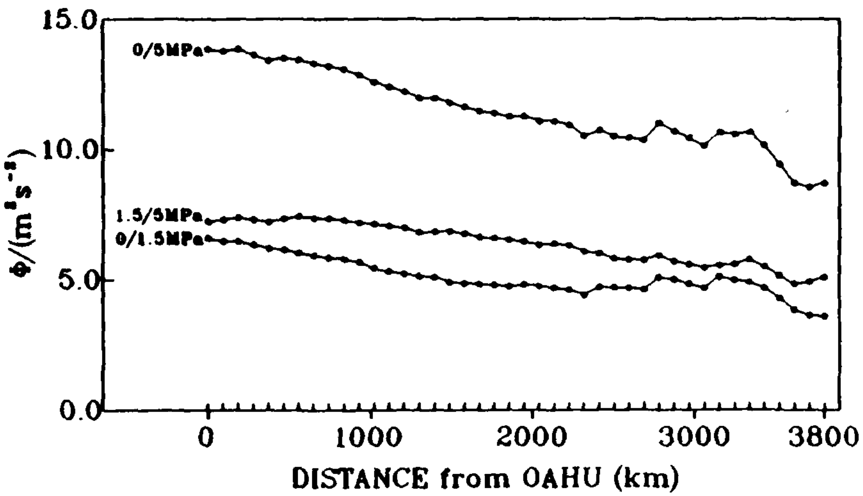
GEOPOTENTIAL ANOMALY
SEP 1 MEAN



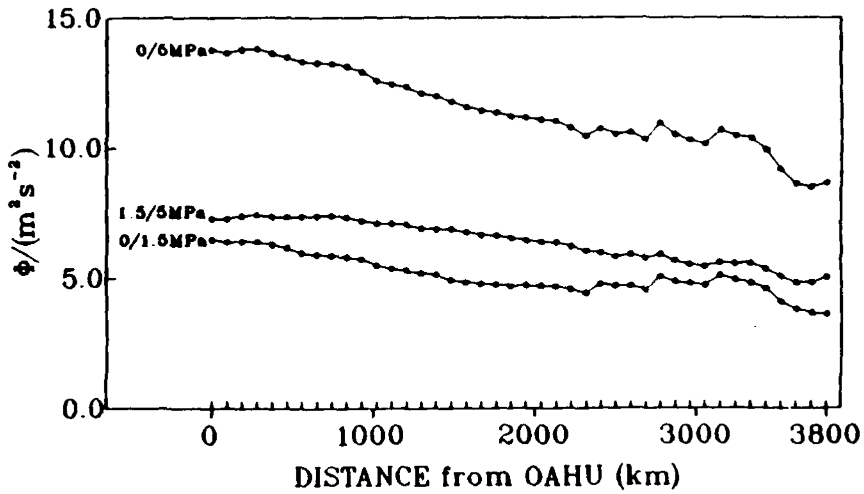
GEOPOTENTIAL ANOMALY
SEP 15 MEAN



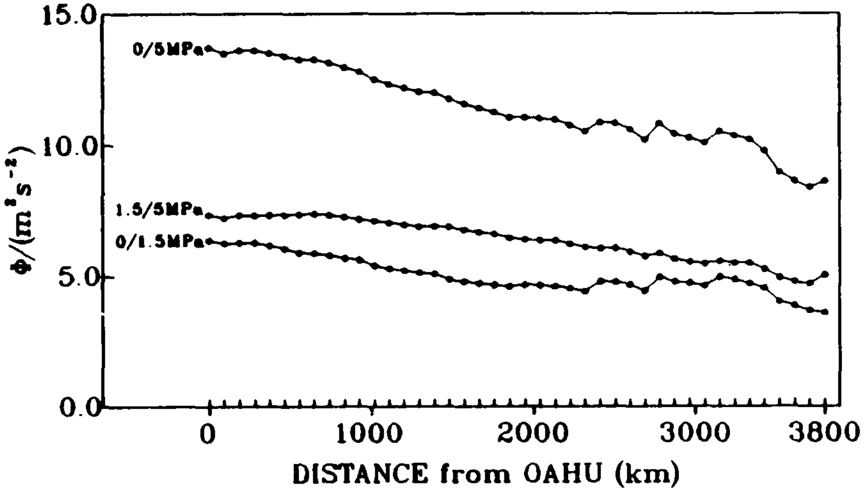
GEOPOTENTIAL ANOMALY
OCT 1 MEAN



GEOPOTENTIAL ANOMALY
OCT 15 MEAN



GEOPOTENTIAL ANOMALY
NOV 1 MEAN



GEOPOTENTIAL ANOMALY
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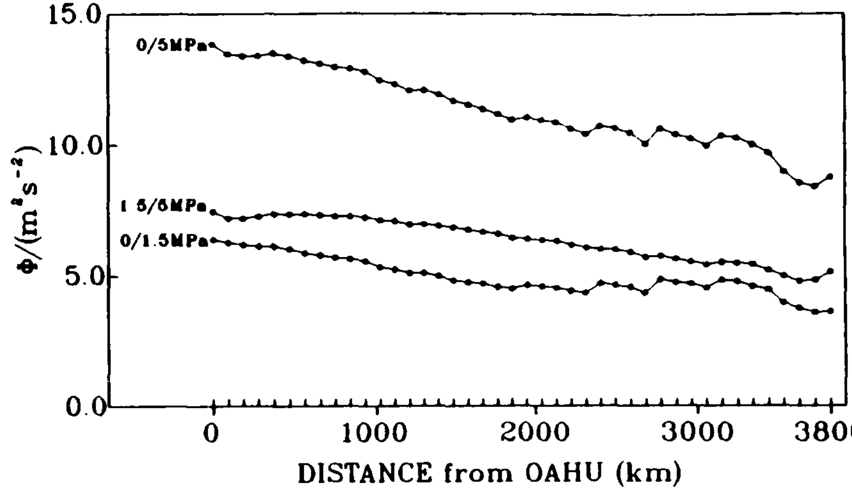

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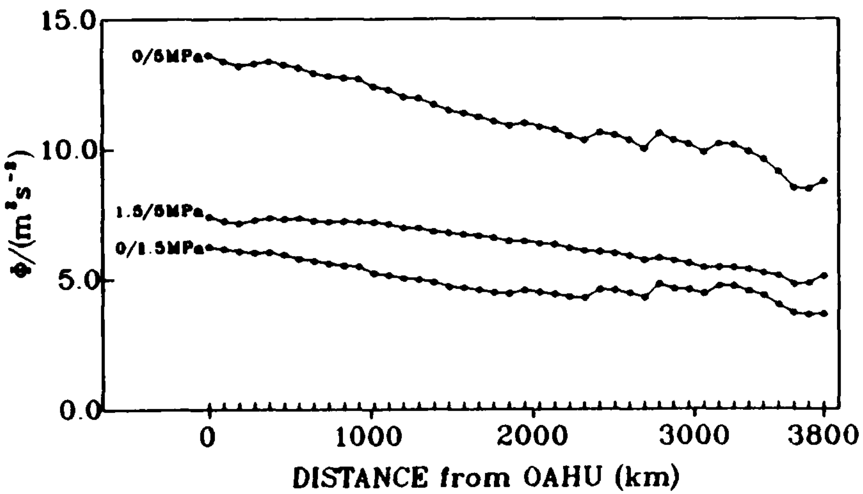
DEC 1 MEAN



GEOPOTENTIAL ANOMALY
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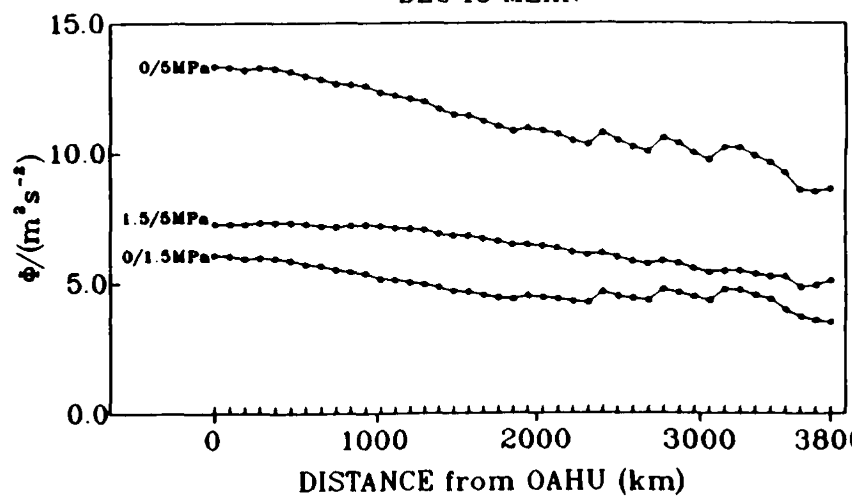

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Semi-monthly time series of expendable bathythermograph (XBT) observations, objectively mapped onto the great circle arc from Oahu, Hawaii to the Farallon Islands off San Francisco, California are presented. They reveal the temperature structure in the upper 500 meters from November 15, 1967 through December 15, 1979. In addition, sections of geopotential anomalies relative to 5 MPa (5 mega Pascals) derived from the temperature sections and temperature-salinity (T/S) relations are presented. Averages of temperature and geopotential anomalies over the 12 complete years of data coverage, 1968 - 1979, and over each semi-month (i.e. all January 1 sections, all January 15 sections, all February 1 sections, etc.) during the 12-year period accompany the time series.

A modest bibliography of articles on other observations of the temperature structure and currents in the North Pacific is included, along with a brief discussion of the various topics addressed in the studies referenced.

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